The Journal of the American Medical Association

VOL. XXXVI. CHICAGO, ILLINOIS, APRIL 13, 1901. No. 15.

Address.

REFLECTIONS UPON THE PRESENT STATUS OF CLINICAL MEDICINE.*

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PHILADELPHIA.

The pleasure and satisfaction with which I accepted the invitation of your president, to deliver the address on this occasion, I am free to admit were somewhat tempered by the knowledge that I was expected to say something. The selection of a subject that might be at the same time appropriate and interesting has been to me a matter of considerable concern. More especially has this been the case as the advent of the new century brings with it the temptation to review the achievements of medicine during the past one hundred years and to prognosticate the promises of the future. The changes wrought in medicine during the nineteenth century have been so revolutionary, the achievements so marvelous, the discoveries so numerous, the inventions so ingenious and of such far-reaching consequences to the individual and to humanity, that a discussion of them seems most pertinent and inviting. I have, however, been restrained from acceding to this temptation because I fully appreciate that it would be futile, in the time at my disposal, to attempt a survey even in a most cursory manner, of a field so extensive, and because I am well aware that such reviews will be made by other pens more able than mine. I have, nevertheless, thought that it might not be unprofitable to call your attention to some reflections upon the present status of clinical medicine and upon the relation of science to medicine at the dawn of the twentieth century. Such reflections must necessarily be cursory and fragmentary, rather than complete and exhaustive; they must serve to recall that which is probably more or less well known, rather than adduce new facts or novel theories. It is hoped, however, that they may be somewhat indicative of the changes in the art and science of medicine during the past, reflective of the trend of medical opinion at the present time, and possibly suggestive of the achievements to be expected in the future.

MEDICINE A SCIENCE OR AN ART.

From time to time it has been much debated whether medicine is a science or an art. It seems to me, however, that the abstract question admits of but a single answer. Aristotle defined medicine as the art of healing—and surely medicine broadly speaking is the art of healing disease. Such, however, have been the developments of medicine during recent years, that to the more practical art of healing disease has been added the likewise practical, but more ideal, art of preventing disease. The modern conception of medicine, therefore, is the art of preventing and healing disease. It concerns itself not so much with abstract problems and speculation, as with concrete instances of disease, with disease as it occurs in the individual; in prophylaxis, however, its scope is broadened so as to include whole communities and nations. It is an art that all may cultivate, though each may not become equally proficient in its practice. Its acquisition depends in large part upon the character and personal qualities of the individual, upon the possession of an observant and properly trained mind and upon experience. These, however, avail the physician but little unless he be well-grounded in the sciences upon which medicine depends for its very existence; the art without the science leads inevitably to charlatanism. Thus medicine, like other arts—such as engineering, navigation, etc.—is founded upon science, upon the sciences of physiology, chemistry, pathology, bacteriology, and pharmacology, as well as upon certain well-defined principles of physic.

NEED OF KNOWLEDGE OF PATHOLOGY.

It is by no means my intention to discuss all the questions that obtrude themselves for consideration. The majority of us become general practitioners of medicine and surgery, and that which concerns us especially is the acquisition of the ability to recognize and differentiate disease, and hence to be able to institute the appropriate treatment. In passing, I may say that he who diagnoses well, treats well, and that the acquisition of the ability to do both is best facilitated by a thorough knowledge of the fundamental sciences of medicine. The importance of the principles of physic, and of chemistry, physiology, and pharmacology has been so long recognized as to require no reiteration from me. I can not, however, refrain from directing attention to the importance of science in general, and the sciences of pathology and bacteriology in particular, in the recent wonderful advances of medicine.

To my surgical confrères, I need but mention the value of a thorough knowledge of physics and mechanics in the appreciation of the factors at work in the causation and repair of luxations, fractures, deformities of the limbs and vertebras, hernias, foreign bodies and calculi in the several cavities of the body, etc. A knowledge of physiology and chemistry, of fundamental importance in the study of medicine, is of no less value in the understanding of many problems in internal medicine—such for instance, as many of the disorders of metabolism and of nutrition, of atrophy and hypertrophy and degeneration; derangements of the functions of many of the organs of the body that are now known to have an internal secretion; the manifestations and appropriate treatment of many of the poisons, be they metabolic or physiologic, chemic or bacterial, etc.

* Inaugural address delivered at the opening of the session of the Medical Department of the University of Vermont, Jan. 3, 1901.

But he who will be a good diagnostician and a rational therapist must understand disease—he must know pathology. By this I do not mean that he must be acquainted merely with the macroscopic and microscopic appearances of diseased tissues and organs; such limited information avails but little in the practical application of our knowledge at the bedside. But I do mean that, in addition, he must be conversant with the natural history of disease and with the nature of diseased processes; he must be able to distinguish cause from effect; he must understand the reactions of the body to various morbific agencies, such as heat and cold, chemic and mechanic irritants, parasites and their deleterious products; he must appreciate the manner of the production of morbid physiology or the symptoms of disease; he must endeavor to fathom as far as possible the means provided by Nature to ward off, neutralize, and counteract the various morbific agencies and their deleterious products; he must study the phenomena of natural and acquired immunity to certain diseases; he must recognize that senility and finally death are natural events in the course of all forms of life, and that the retrograde alterations and degenerations that accompany and characterize old age are not necessarily manifestations of disease. Senility itself is an elastic term and is not always to be measured by the number of years that a man has lived. In the homely saying that a man is as old as his arteries, there is a goodly portion of truth. We recognize, however, that certain tissue metamorphoses that accompany and are expected in old age are distinctly pathologic when encountered, as they sometimes are, in earlier life. It is the physician confident in the possession of the knowledge as here outlined who is capable of recognizing and discriminating between diseased processes in actual practice; who is able to detect the earliest manifestations of the insidious onset of certain chronic diseases and by appropriate treatment to ward off the acute and alarming symptoms of some of them; who in the presence of disease assists Nature when there exists no specific for the malady in question, and who rationally administers it when there is one; who is able to prognosticate the outcome; and who does not retard the efforts of Nature by the indiscriminate and injudicious use of drugs and other remedial measures that are not indicated.

RISE OF DOGMATIC MEDICINE.

That a thorough knowledge of pathology is essential to correct diagnosis is sufficiently evident from the egregious blunders made by eminent physicians before the dawn of modern pathology and by others at the present time who are unacquainted with the subject. In days gone by there was much wise talk of impurities of the blood; of humors and of temperaments; of animal and vital spirits, etc. What we now know to be merely symptoms of diverse diseases were in those days mistaken for the disease itself. Thus a patient was said to suffer with a rheum, a palsy, a dropsy, or a fever. Ascites was held to be the cause of cirrhosis of the liver, fever of the excavations of the lungs in phthisis, asthma of dilatation of the heart, anarsarca of albuminuria, etc. The same erroneous views are evident in the designations applied to certain diseases, and which persist to the present time. Thus apoplexy means a stroke or striking down; pleurisy, stitches in the side; podagra, a seizure in the foot or a foot-ache; etc. Even when an examination of the body was made after death, the patient was often reported to have succumbed to such disorders as a "decline," and the like. When such were the ideas of disease, it is not surprising that certain systems of medicine arose and flourished for a time. Of these I might mention the "depletory," the "corroborant," the "iatro-mechanical," the "iatro-chemical;" that founded on the doctrine of signatures, in conformity with which the Paracelsian physician prescribed an infusion of yellow flowers and saffron for jaundice, an infusion of roses and bloodstone for hemorrhage, the spotted leaves of pulmonaria for tuberculous lungs, etc; that practiced by the astrologers who in accordance with the horoscope of the patients, prescribed various metals and plants; the Brunonian according to which disease resulted from either a deficiency or an excess of excitement; and finally that which still persists, homeopathy, "of which the theoretical absurdity is somewhat concealed by the more obvious nonsense of infinitesimal doses." (Pye-Smith.) It is not to be wondered at that the times when systems of medicine founded upon dogma flourished were not far removed from the days of exorcisms, incantations, witchery, etc.

END OF DOGMA IN MEDICINE.

With the dawn of modern pathology, however, when diseased processes, as other departments of science, began to be studied and patiently investigated for their sake alone; when there came to the prosecution of the investigations the genius of Meckel and Rokitansky in Germany and Austria; Laennec, Bayle, and Cruveilhier in France; Baillie, Abercrombie, and Bright in England; and later Cohnheim and Pasteur, the still living and distinguished Koch, the much revered Virchow, and a host of others in all parts of the world, the times of dogmatic medicine came to an end, the systems of medicine were buried in irrevocable oblivion, and exact diagnosis and rational therapy became a possibility. It was in consequence of the pioneer work of these men that empirical methods were replaced by those of science; to them the honor that, as regards medicine, the nineteenth century will be known as the age of cultivation of the scientific spirit. It is to the original investigations and patient research inaugurated and stimulated by these men, the seeking after new discoveries, the constant endeavor to add to our store of facts, that the wonderful achievements of medicine during the latter part of the past century are attributable.

BACTERIOLOGY IN MEDICINE.

The results of this cultivation of the scientific spirit are obvious in all departments of medicine, but nowhere more conspicuously than in the field of etiology. For years, while certain branches of medicine, more particularly surgery, were progressing, thanks to the introduction of anesthetics and what, in honor to the man, may be termed Listerism, clinical medicine seemed at a standstill. This was due to several reasons, but especially to our lack of knowledge of the etiology of disease. We were awaiting the new science of bacteriology—that science which during the past twenty years has added so much to our store of knowledge and been of such incalculable benefit to humanity. As a consequence of careful and minute investigations, patient research, and the replacement of empiricism by science, we now have satisfactory scientific evidence of the bacteriologic origin of many previousy obscure diseases, of which the following may be mentioned: anthrax, tuberculosis, relapsing fever, leprosy, actinomycosis, glanders, gonorrhea, typhoid fever, Malta fever, diphtheria, cholera, lupus, tetanus, influenza, plague, erysipelas, dysentery, pneumonia, cerebrospinal menin-

gitis, the various septic infections, certain epidemics of meat poisoning, etc. We have been enabled to trace many hitherto inexplicable diseases—veritable scourges of mankind and the lower animals—to minute organisms; we have isolated and recognized the micro-organisms themselves and differentiated them from others which they resemble; of many of them we have already determined the life history; in many cases we have determined the manner whereby they gain access to the human body; we have ascertained how they exert their deleterious effects; in some cases also we have discovered the methods by which these effects may be neutralized and prevented. There is, however, much virgin soil yet to be tilled; more particularly have we yet many problems referring to the chemic and toxic products of these bacteria to solve. While the clinical evidence of the infectious nature of some other diseases is beyond dispute, their bacteriologic origin is still undetermined. Thus we await the demonstration of the bacterial nature of such diseases as smallpox, syphilis, soft chancre, measles, mumps, scarlet fever, typhus fever, yellow fever, rabies, pertussis, rheumatism, arthritis deformans, etc. The origin of certain of these diseases has already been ascribed to certain bacteria, but the evidence is yet inconclusive. There can, however, be no reasonable doubt that ere long the specific causative bacteria will be isolated, and this is all the more likely when we remember that although Villemin demonstrated conclusively the infectious nature of tuberculosis, by systematic inoculations in 1865, the specific bacterium was not isolated by Koch until 1882.

But it was not alone the lowest forms of vegetable life that were found to exert such a malign influence on human life. While these minute vegetable organisms were being isolated and studied, it was also ascertained that some of the lowest forms of animal life were equally portentous for evil. Thus the filaria was demonstrated as the cause of one of the hitherto obscure diseases of the tropics, and malaria was found to be due to a protozoon. And both of these organisms were found to infest the blood of their victim. Then the dependence of dysentery upon the ameba was ascertained and it was also demonstrated that this organism gaining access to the portal circulation is carried to the liver, where it gives rise to abscess formation. Thus was conclusively shown the dependence upon the same organism of two conditions so closely related clinically. It is, however, interesting in this connection to note the recent investigations of Shiga and Flexner, both of whom have been studying a bacillus that seems to be the cause of many cases of tropical dysentery. The most noteworthy investigations of recent date, however, are those that conclusively demonstrate the rôle of the mosquito in the propagation of malaria, and the still more recent experiments that seem to show that the same animal is concerned in the spread of yellow fever.

We must remember that although bacteria are essential to the production of certain diseases, the mere presence of bacteria is not competent to provoke the disease. The general economy is an extremely important factor that has to be reckoned with. The healthy body offers a greater or less resistance to the development of certain diseases, and this resistance differs in different individuals and in the same individual at different times. Thus the infections of various diseases, such as tuberculosis, diphtheria, scarlet fever, smallpox, rabies, etc., exert a varying influence for evil depending upon whether the patient is naturally immune to the disease, or has been vaccinated, or has had the disease, or has received a dose of prophylactic serum. While there are many problems still to be unraveled, we are nevertheless beginning to understand something of the significance of hereditary predisposition and immunity; we are learning also the significance of shock, checked secretions, an initial chill, etc. We know that we are constantly surrounded by the specific germs of various diseases; in some instances these germs are introduced into and are harbored by the body. But such is the resistance of the healthy human organism to the deleterious tendencies of the micro-organisms that it is not until the bodily vigor is reduced or altered by exposure, indiscretions, fatigue, etc., that the bacteria are enabled to overcome the activities of the body that restrain them and, gaining access to the tissues, produce their evil effects. It is likely that the occurrence of this is sometimes manifested by a chill, etc.

It behooves us now to consider the bearing of these scientific investigations upon the practical aspects of medicine—upon the diagnosis, treatment, and prevention of disease. Of what value to us as practitioners of medicine have they become? Of what value to the individual and to the community at large has been the tracing a number of diseases to the activities of minute organisms?

DIAGNOSIS SCIENTIFIC.

The special object of the investigation of the etiology of disease is that disease in the individual may be recognized and cured if possible, and that the spread of the disease may be prevented. The diagnosis of disease is and always will remain an art, but it is becoming more and more scientific. It may be said that strictly speaking diagnosis is altogether a product of the nineteenth century. Prior to that time it was merely a matter of guess-work and was never definite. At the commencement of the nineteenth century, however, Louis inaugurated his methods of careful clinical investigations, and these amplified and extended have remained the guide of clinicians ever since. To Avenbrugger, Laennec, Skoda, and Corvisart we owe the perfection of methods of physical exploration, the common property of all physicians at the present time. It was, however, during the last quarter of the past century that the diagnosis of disease progressed by leaps and bounds. This was due entirely to the cultivation of the scientific spirit and the consequent employment of laboratory methods. Prior to this time, the careful clinical observation that had long been in vogue, the patient scrutiny devoted to the manifestations of disease, had led to the establishment of a nosology to which it is doubtful if any noteworthy additions would have been made but for the employment of laboratory methods.

In approaching a patient our aim should always be to make our diagnosis definite and exact. That this desideratum be attained our investigations must be thorough. We must inquire carefully and minutely into the influences of nativity, heredity, environment, habits of the patient, etc. We must secure an accurate account of the mode of onset and the manner of the evolution of the disease, and our examinations of the patient must be thorough, complete, and frequently repeated. In this connection I wish particularly to urge the importance of the cultivation of your powers of observation. It is well known that many of the physicians of bygone days owed their pre-eminence in the profession in large measure to the acuteness of their powers of observation and to the care and attention that they paid to little things—things that are likely to escape the observation of others less attentive. The

same may be said of us at the present time; the more careful and painstaking we are the more likely we are to attain success. On the extreme value of methods of physical exploration, I need not dwell here.

The necessity for careful bedside observation has been recognized from time immemorial; it must always remain our mainstay. At the bedside we must prove or disprove our theories, and there the results of laboratory investigation must stand the test of practical utility. We must never permit our theories to displace the results of our careful bedside observation and experience; these must constitute our guide in practice. In this connection, however, I am reminded of the aphorism of Hippocrates: "Experience is fallacious and judgment difficult." In an endeavor, therefore, to assist, correct, modify and supply the deficiencies of the purely clinical method, I wish to ask your serious attention to the importance and utility of what have come to be known as laboratory methods of diagnosis. The one is not to supplant the other; but both are to be employed in conjunction. I would have you adopt the wise middle course; be neither carried away by the extravagant claims of those who would seem to have us place exclusive reliance upon the results of laboratory investigations, nor yet so narrow-minded as those who, in their ignorance and indolence, refuse to admit the utility of the laboratory.

In that the laboratory to-day is indispensable, permit me to refer briefly to certain aspects of laboratory diagnosis. I am confident that no one to-day alive to the duties and responsibilities of his trust as a physician is unprovided with a microscope and a few chemical reagents and neglects to examine carefully, both chemically and microscopically, the urine—shall I say of all his patients? Surely a patient has a right to expect that his nausea, his headache, his dimness of vision, his dyspnea, if due to a renal lesion, shall be recognized as such; and that if his attack of typhoid fever be complicated by nephritis that the latter shall be ascertained and properly treated. There are a few simple methods of analysis of the gastric contents that are readily mastered by any one having the inclination. And who will deny that a patient with carcinoma of the stomach or a benign stenosis of the pylorus and consequent dilatation of the stomach has not a right to expect that the condition shall be recognized at the earliest possible moment, to the end that he may enjoy the benefits of early and appropriate treatment? Then the examination of the blood is of extreme importance in the recognition of very many diseases—diseases not alone of the blood and blood-forming organs, but also of the most diverse disorders of the various organs and tissues. I will not state that it is essential to the recognition of all cases of chlorosis, but it is always confirmatory of the diagnosis and in many instances the diagnosis can not be made with certainty without it. How many young women to-day are being dosed with bitter tonics for a supposed gastric catarrh, or with aperients for constipation, or with various coal-tar products for headache, or with various preparations designed for the relief of amenorrhea, or with digitalis for supposed heart disease, when in reality they are suffering only with chlorosis, which an examination of the blood would disclose and the administration of iron would promptly cure? Again, my experience leads me irresistibly to the conclusion that diseases such as leukemia are never recognized except by those who make a practice of examining the blood. I have seen a number of patients believed by other physicians to be suffering with typhoid fever, when in reality they were ill with pneumonia, appendicitis with periappendicular suppuration, malignant endocarditis, acute lymphatic leukemia, and the like. The improbability of the presence of typhoid fever would have been evident immediately upon the examination of the blood, and as a matter of fact in some cases this was the first clue that led to the establishment of the correct diagnosis. I can not too strongly insist on the importance of the presence or absence of leukocytosis in the diagnosis and differential diagnosis of very many conditions, but time and space forbid multiplication of instances.

BACTERIOLOGIC METHODS IN CLINICAL MEDICINE.

Of the importance of bacteriologic methods in clinical medicine I need say but little. It would seem like resowing what I am sure must already be an extremely fertile land. I may mention, however, the Gruber-Widal test in the diagnosis of typhoid fever. This is one of the most highly prized adjuvants to our clinical armamentarium within recent years. It is of extreme importance in the recognition of typhoid fever, and is of especial value in doubtful cases, as it was in the cases to which I have just made allusion. But not only in typhoid fever is the test of signal value, but by means of the agglutination and immobilization of the specific bacteria, we are enabled to recognize Malta fever, relapsing fever, cholera, anthrax, tuberculosis, dysentery, plague, etc.

Need I mention the importance of an examination of the sputum in suspected cases of pulmonary tuberculosis? Need I refer to the importance of an early and exact diagnosis—importance alike to the patient, the family, and the community wherein he dwells? Here I might mention what I feel sure will be one of the developments in the near future. We will speak of a pneumococcic, staphylococcic, streptococcic, a Friedlaender bacillus, or an influenza bacillus, infection of the lungs, meninges, etc., as the case may be, rather than of a pneumonia, meningitis, etc. When we are able to recognize clinically the differences in these infections, we may perchance have at our disposal better therapeutic measures—specific remedies. Then will arise the necessity for the examination of the sputum in all cases of pulmonary disease, of the cerebrospinal fluid in all cases of involvement of the cerebrospinal coverings, etc. In passing it is worth while noting that some of the pulmonary complications of typhoid fever have already been traced to the typhoid bacillus.

Of the importance of a bacteriologic examination of the secretions of the throat in all cases of disease of the throat, more especially in cases suspected to be diphtheria, I will say nothing; this is too well and universally recognized to require reiteration on my part. Equally important is an examination of the urethral, vaginal, and uterine discharges, for the gonococcus; of the lochial discharges and uterine scrapings in postpartem infections, for the staphylococcus, streptococcus, etc.; of the urine and feces, for the tubercle bacillus, typhoid bacillus, cholera bacillus, and other organisms, etc. I may mention that in consequence of recent investigations it has been found that the urine as well as the feces contains the typhoid bacillus in a large percentage of cases of typhoid fever. This fact has been made use of in some cases for the purposes of diagnosis, but the especial practical inference is that the urine must be disinfected in all cases of the disease. Were I to mention other laboratory procedures of value in diagnosis, I might cite the bacteriologic examination

of the blood in certain cases, the use of the tuberculin test, the mallein test, radiography, and to these I might add the ophthalmoscope, the laryngoscope, the sphygmograph, etc.

Such laboratory methods of diagnosis should be made use of in all cases in which they are likely to prove of the slightest utility. This strictly interpreted means practically all cases. In hospital work they should be employed as a matter of routine. The necessity of the times, however, is the more universal adoption by the general practitioner of these various aids in clinical diagnosis. This is indicated alike in the interests of the physician, the patient, and the general community. It is to the interest of the physician that he may establish the correct diagnosis at the earliest possible moment, institute the appropriate therapy, and enjoy the mental satisfaction pertaining to work well done; to the patient, that he may reap the personal benefit of the early diagnosis and appropriate treatment; to the community, that in the case of certain infectious diseases the sick man may not prove a source of general infection. I am aware that these procedures add to the already heavy burden of the general practitioner, but they may be mastered by any one having the inclination. In the city as well as in the country a corner of the office may be made to do duty for a laboratory. If the practitioner be too busy to attend to the work himself, he ought to be able to find some one capable of doing it for him. Surely the patient in the country as well as in the city has a right to expect an intelligent interpretation of his symptoms, and in some cases this is not possible without the aid of laboratory methods. Thanks to an enlightened public spirit, in many parts of the country such examinations are made for the physician by the laboratory of the city, county, or state board of health. Thus there is really no excuse for their omission. What I do insist upon, however, is that the physician, be he in the country or the city, in case he feels neither competent nor inclined to make these examinations himself, should at least know when they should be made; and knowing that they should be employed in a certain case, he should see to it that they are made by some one who is competent. There was a time when there was no stethoscope, no microscope, and no clinical thermometer, and doubtless the physicians of those times felt their increasing burdens as each was added to their necessary armamentarium. Each, however, has abundantly proved its necessity, and the same will some day be said of the so-called laboratory methods of diagnosis.

Heretofore diagnosis has concerned itself solely with the detection, proper grouping, and discrimination of symptoms. Now, however, we are commencing to penetrate deeper; we are endeavoring to fathom, and in some cases we have already ascertained, the ultimate causes and nature of diseased processes. Until within a short time our studies were largely confined to the changes occurring in the tissues in disease; now we are learning something of the causes and the manner of the production of these changes. Upon the discovery of bacteria as the causative factors of some diseases, it was considered that they wrought their alterations by inducing asphyxia and consequent necrosis of the tissues by mechanic occlusion of the blood-vessels; later it was thought that they induced changes in the tissues by appropriating to themselves pabulum designed for the nutriment of the tissues. It is still probable that in some cases these are correct interpretations of the phenomena; but we know, however, that in the majority of cases bacteria produce their injurious effects by reason of the poisons they elaborate. Concerning the exact nature of these poisons we still await positive information; and here is a fertile field for investigation. Some of these poisons, however, have already been determined to be allied to the alkaloids; others resemble modified proteids, and have in consequence been spoken of as toxalbumins; of the nature of others, we know little or nothing.

SELECTIVE ACTION OF TOXINS.

The definite scientific demonstration of the toxic nature of many infectious diseases has resulted in the shedding of diffuse light upon many hitherto obscure problems. I wish here to refer briefly to but one interesting aspect of the question—the selective action of these toxins. It has been demonstrated that the general symptoms of many diseases may be reproduced with extreme accuracy by the introduction into the body of toxins of bacteria—of the toxins freed from the bacteria, or of the toxins in a mixture with dead bacteria. In the selective action of these toxins we find a rational explanation of many of the phenomena of the different diseases. Thus the toxins of the diphtheria, tetanus, and influenza bacilli have a special affinity for the nervous system. That of diphtheria, however, is especially prone to attack the peripheral neuron, especially that supplying the muscles of the throat, internal muscles of the eye, and the heart; that of tetanus implicates especially the higher nerve centers; that of influenza exerts its influence more especially upon the meninges with resultant evidences of cerebrospinal meningitis. Analogy is found in the special affinity of other poisons for various tissues and organs. Thus tobacco exerts its action especially on the heart; alcohol is especially prone to produce paralysis of the extensor muscles of the leg; lead most frequently causes paralysis of the extensor muscles of the wrist and fingers; arsenic is a common cause of peripheral neuritis; and the venom of serpents seems to possess a special faculty for producing hemorrhagic nephritis. Further analogy is found in the special affinity of certain tissues, such as muscle, nerve, elastic tissue, etc., for different stains.

INTERNAL SECRETIONS.

I must here mention, also briefly, another result of the cultivation of the scientific spirit in medicine—the establishment of the doctrine of internal secretions. There are in the body certain tissues called glands, of which the functions until recently were absolutely unknown. Recently it has been shown that many of these possess internal secretions which exert powerful influence not alone in the development of the body and the preservation of health, but the perversion or cessation of which is extremely potent in the causation of disease. The organs to which, with more or less reason, we at present attribute an internal secretion are the thyroid, thymus, adrenal, pituitary, pineal, spleen, pancreas, testicle, ovary, mammary gland and bone-marrow. It will be observed that some of these are possessed of a duct and have an external secretion, whereas others have no duct and have no external secretion. In consequence of strictly scientific investigations we now know that several hitherto obscure symptom-complexes are due to perversion or cessation of the function of one or the other of these organs. One of the most brilliant pages of the history of recent medicine is that which records the investigations concerning the thyroid gland. To the perversion or cessation of the function of this organ we now know is due the disease myxedema. This is a condition first noted by Gull, but

later accurately described by Ord, who, attributing it to disorder of the thyroid, gave it the name by which it is now known. Subsequently the condition was produced accidentally by Kocher, by the extirpation of the gland, and later experimentally in the lower animals by the same means. Finally Murray suggested the internal administration of the gland for the cure of the condition with results brilliant beyond expectation. The same excellent results have since been achieved in the treatment of sporadic cretinism, and we know, in addition, that the extract of the gland is an excellent remedy in the treatment of many cases of obesity. To the perversion or cessation of the function of the adrenal is due Addison's disease, and to that of the pancreas certain cases of diabetes. Though we may hope for it in the future, we have as yet no means of successfully combating either of these diseases. Regarding the functions of the other organs mentioned, we have as yet no definite information. It has been thought, however, that the internal secretion of the testicle and ovary are answerable for the production and maintenance of the masculine and feminine characteristics respectively; that the pituitary and pineal glands are concerned in the development and preservation of symmetry of the body, and that the perversion of their function results in certain forms of giantism and acromegalous disease; and, finally, that the thymus may be in some remote way connected with certain hemorrhagic tendencies. Though much has been learned, much remains to be ascertained; but confidence born of achievements in the past leads us to hope for developments in the future, the nature and range of which it is difficult to prognosticate.

PROPHYLAXIS AND TREATMENT.

In conclusion, I must say a word concerning prophylaxis and the treatment of disease. Regarding the former, I will only say briefly that upon the doctrine of the bacterial origin of disease is founded the modern conception and practice of sanitary science. This which in many respects has already developed to the dignity of a specialty, has resulted not only in promoting the welfare of the community and the prolongation of the life of the individual, but it has saved humanity from many epidemics—from an almost incalculable amount of sickness and very high mortality. I need but refer to the recent occurrence of the plague in New York, San Francisco, and Glasgow. It is certain that but for the developments of preventive medicine the few cases in each city would have resulted in widespread epidemics. The prophylactic treatment of tuberculosis—the modern crusade against tuberculosis—is also one of the most encouraging signs of the times. Of other diseases, the ravages of which modern preventive medicine has curbed in large measure, I might mention typhus fever, typhoid fever, cholera, smallpox, venereal diseases, etc. The future seems to promise that soon that ancient and ubiquitous disease, malaria, will be throttled at its fountain source—the mosquito.

With regard to therapeutics and the practical care of disease, it is certain that the scientific researches of recent years have taught us much. While it must be admitted that the administration of a large proportion of our therapeutic measures is still founded upon empiricism, and that many of our drugs are given with a view to the relief of symptoms and the amelioration of the effects of disease rather than a destruction of their causes, our empiricism is a rational one. In contradistinction to that of former ages it is founded upon common sense, and from it, as have other sciences from their empiricism, we are gradualy deducing many scientific facts. Of late years, as a result of scientific investigation, we have learned the true value of drugs and their limitations. We have come to employ fewer drugs and less complex prescriptions. We no longer consider it necessary to nauseate our patients with shotgun prescriptions in the hope that at least one of the ingredients will possess a special affinity for the diseased spot. We have ascertained that in reality drugs play a not conspicuous part in the cure of disease, that their especial office rightly performed is to assist and guide nature in her efforts to effect a cure, rather than to attempt to abort a disease which in many instances run a definite and self-limited course.

The physiologic action of each drug having now been worked out scientifically in the laboratory and at the bedside, when in the presence of disease we note an indication for its employment, we administer it confident of its action in accordance with well-established precedent. This is in many respects purely symptomatic treatment. An intelligent symptomatic treatment, though by no means ideal therapy, is not to be disdained. In many instances it is not only the only form of treatment at our disposal, but it is really founded upon a scientific basis. Thus, for instance, if we know that the symptoms of a disease are due to a lack of bone salts, or of iron, or of thyroid secretion, we supply the deficiency with the proper remedy as the case may be; if due to the presence in the body of excrementitious products that should be removed by a diseased organ no longer capable of normal functional activity, we facilitate its elimination by stimulating the other emunctories; if due to a poison introduced from without, we neutralize it within the body or we hasten its removal through the appropriate channels. On the other hand, we are beginning to understand in some degree the mode of action of certain more or less specific remedies the discovery of whose good effects was purely a matter of chance. Of these I might mention quinin in malaria, salicylates in rheumatism, mercury and the iodids in syphilis, the iodids in actinomycosis, the bromids in epilepsy, etc. Of the mode of operation of some of them we, however, as yet know very little.

We have also come to appreciate at their true value certain remedial measures other than drugs. Thus we know that the most important part of the treatment of tuberculosis is an abundance of fresh air and good, nutritious food; we are aware of the value of systematic rest, massage, and electricity in certain nervous disorders, and of the importance of hydrotherapy in various diseases of the nervous as well as of other systems; we know that many affections of the heart are greatly benefited by systematic exercises and baths; and above all we appreciate the paramount importance of regulation of diet in almost all cases of disease. Then we bear in mind the recuperative effects of sleep, and we should remember that physiologic rest of a disordered organ is a great restorer of health.

SERUMTHERAPY.

My last theme is serumtherapy, which may be looked upon as the crowning glory of the cultivation of the scientific spirit of the nineteenth century. Without attempting any discussion of this exceedingly interesting subject, I may allude to the fact that the use of antiserums in diphtheria and relapsing fever has been markedly efficient; in tetanus, hydrophobia, and snake bite they have been less efficient though very good; whereas in pneumonia, erysipelas, septicemia,

tuberculosis, dysentery, they have proved rather indifferent, though on the whole promising. But not only in the treatment of disease, but likewise in the prevention, have these serums proved of value. The use of antitoxin in the prophylaxis of diphtheria is now a well-established mode of procedure. Preventive inoculations have also been employed with more or less success in plague, typhoid fever, dysentery, cholera, etc.

It is impossible to foretell what will be the developments in this branch of medicine. That brilliant discoveries are yet to be made can not be doubted; that there will occur improvements in the methods of preparation and administration of those serums that we at present possess is equally certain. That we may yet have a means of curing smallpox as we have of preventing it is to be hoped. That we may prevent and cure yellow fever as well as a common cold are not without the bounds of probability. The past is full of encouragement; the future full of hope.

Original Articles.

THE PRESENT STATUS OF SPINAL SURGERY.*

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In considering the subject of the surgery of the spine, it must be remembered that when I wrote my former papers, in 1891 and 1892, certain propositions were still debatable which have now been distinctly settled, so that we are able to reach much more definite conclusions. In my paper on "Laminectomy for Pott's Disease with Paraplegia," after tabulating 75 cases, I said that personally I could not see any very brilliant future for it. It can be applicable to less than 50 per cent of the cases of Pott's disease, as proved by the statistics of Gibney and Myers, and even in this small number its application is limited again to those cases where the compression has not produced a complete degeneration of the cord. Still, it is not by any means to be relegated to the obsolete class of operations. It has a place, and that place, I am convinced, is destined to play a more important part in the therapeutics of Pott's disease than it has heretofore.

Since then I have operated on 15 patients, all of them unfortunately in advanced stages of tubercular disease. Chipault succeeded in tabulating 101 cases, and I have succeeded, including my own, in tabulating 154.

Although only two of mine were ultimately successful they proved that the operation per se is not dangerous. Not a single patient has died from the effects of interference with the vertebral column, but in every instance death occurred, at a considerable period after the operative measures, from an advancement of the tubercular disease. There would be more hope for these patients could we see them earlier, before general tuberculosis has intervened, or before the pressure upon the spinal cord has produced degenerations which are irremediable by operative or other means. Unfortunately mechanical treatment is persisted in until all chance for the success of operative interference has passed, and until either the septic condition is so grave or the tubercular lesions have extended so far into other structures that the condition of the patient almost contraindicates any operative procedure. In cases far advanced in Pott's disease, with long-continued pressure or with tubercular lesions in other parts of the body, or with a general and advanced sepsis, the operation can be of very little benefit.

In the other cases, those for instance where the tubercular lesion is distinctly in the posterior portion of the spine, where an abscess has formed, the other organs still being uninvolved, and where it is possible by following up this abscess by careful surgical dissection, provided the undertaking can be done earlier in the disease, we may hope for a better result.

I can not at the present time change the position which I took in 1891, when I said that it is unnecessary to say that no surgeon would undertake an operation of this magnitude where there was any chance of recovery by other means, but there still remains a considerable number of cases that occupy debatable ground, where the chances of recovery without operation are very slight, where continued mechanical treatment yields little or no result, and where an extension of the disease may render the patient hopeless if it does not destroy life. Such patients had better be operated on.

Then, too, there is another class of cases which show only progression of the disease in spite of all care, and where a degeneration is set up threatening the integrity of the cord. These should undoubtedly be operated on and early. The operation should not be undertaken while there are any good chances for recovery without such interference, but should not be postponed so long that an ascending or descending myelitis may destroy the chances of recovery; and the first sign of degeneration of the cord should indicate immediate operation.

Cases of posterior spinal involvement with paraplegia should be operated on, for here the lesion is easily reached. The removal of the involved laminæ and the clearing up of secondary deposits in the bodies or articular processes, or the proper removal of plastic exudation along the cord will place the patient in a far better position than he can be if only mechanical measures are depended on.

If we can prove that the mortality in these cases is small, and that the patients improve after the pressure has been removed, we may then undertake it with considerable confidence; as I have already said, none of my fifteen has died from the effects of the operation. Naturally the region of involvement makes a difference. The same conditions are noted in Pott's disease that are present in laminectomy for other conditions, viz, that the cervical is the least satisfactory, the dorsal the next and the lumbar and sacral regions the best for operative interference. In all of my operative cases for this condition I was surprised to find that the cause of the pressure was usually due to the tubercular debris and granular tissue rather than to any bony pressure, and as this was gradual in its inception, although the paraplegia may have been sudden, the pressure on the cord was seldom very intense, while in frequent instances there was more or less recovery of function. We must still confess, however, in spite of all that has been said on this question, that it will seldom be successful and very seldom indicated. This is due to the fact that in nearly all instances we find that by the time paraplegia has developed there are secondary tubercular deposit that must eventually destroy the patient's life and consequently contraindicate operative interference.

* Presented to the Section on Surgery and Anatomy, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

We have now succeeded in tabulating 154 cases, double the number upon which my former table was based. Of this number, 128 are sufficiently complete to be included in the statistical results. The total number of deaths occurring as the result, or near enough to the time of the operation to be attributable to it, was 21, or 16.45 per cent. The total number of recoveries was 37 or 28 per cent.; of improvement, 16 or 12.5 per cent.; of unimproved, 18 or 14.06 per cent.; or subsequent deaths, 36 or 28.2 per cent.; total, 128 or 100.2 per cent.

In the tabulation of the subsequent deaths I have been perhaps unnecessarily strict. Many who have shown a recovery from the paraplegia or very decided improvement are included in this list. My reason for this is that in the majority of instances these patients died of sepsis or of pulmonary tuberculosis and should not be included if we accept the theory that those patients with advanced sepsis or tubercular disease in other regions than the spine, or with advanced disease of other viscera should not be operated on. They have, therefore, not been counted in the list of recoveries, improvements or non-improvements, but have ruthlessly been classed among the subsequent deaths. One can not but be impressed with the percentage of mortality and recovery when it is considered that these patients are almost without exception in wretched physical condition when the operation is performed. It is also perfectly evident that if the mechanical treatment is stopped as soon as it is evident that the disease is not arrested by it, and before marked sepsis, cystitis or destruction of the cord supervene, the result of the operation must be much improved.

It is also exceedingly important to consider the region involved. Thus we find that in the cervical region, of 18 patients, 5 died immediately following the operation, while an equal number recovered. Only 3 were improved; 1 was not improved and 4 died subsequently. At least 2 of the immediate deaths were the result of hemorrhage following wounding of the vertebral artery when the transverse process and the vertebral foramen were involved. This must, therefore, be carefully considered in operations in this region, as well as paralysis of the phrenics which follows manipulation of the cord in the region of the third or fourth cervical vertebræ.

In the dorsal region, as we should expect, the conditions are somewhat improved. Here we have by far the largest number of cases—103. Of these, 16 died from the effects of operation, 15.54 per cent., as against 27.77 per cent. in the cervical region; 29 recovered, 28.15 per cent., as against 27.77 per cent. in the cervical. The ratio of difference, it will be noticed, is exceedingly slight. Dorsal improvement is 10.67 per cent., as against 16.66 per cent. in the cervical. This is in favor of the cervical region. There was no improvement in 5.55 per cent. in the cervical region, and in 15.54 per cent. in the dorsal, while the percentage of subsequent deaths was 22.22 per cent. in the cervical and 30.09 per cent. in the dorsal. The chief difference, therefore, seems to be in the ratio of deaths, and if care is taken to protect the vertebral artery and the origin of the phrenic nerves in the cervical region, its results should compare much more favorably with those of the dorsal region. There are too few cases in the lumbar region to serve as a basis of comparison.[1]

1. For the first seventy-five cases on which these statistics are based, see "Laminectomy for Pott's Paraplegia," by Samuel Lloyd, Annals of Surgery, October, 1892. I wish to acknowledge my indebtedness for valuable aid in the preparation of these tables to F. T. Zabriskie, M.D., and to Messrs. E. D. B. Loughran and L. D. Mead.

TABLES OF CASES OF POTT'S PARAPLEGIA.

CASE 76.—Operator, Kraus; 1886. Dorsal region; duration, long time; male, 29; motor and sensory paraplegia, vesical and rectal paresis; resection 10-11 D. arches, carious; no improvement; died in 10 weeks. Reference: Paillard Inaugural Dissertation; Wurtzburg, 1890, p. 62.

CASE 77.—Operator, Schoenborn; 1887. Cervical region; duration, 2 years; male, 18; paraplegia below neck, inferior cervical kyphosis, anesthesia complete up to false ribs; third and fourth arches removed, fourth arch gave hemorrhage from vertebral artery; death from hemorrhage in 15 minutes. Reference: Ibid.

CASE 78.—Operator, Richardson; 1889. Cervical region; duration 1 year; male, 22; tumor of neck, paraplegia and slight respiratory trouble; removal of fifth lamina, nothing discovered; respiration difficult; atropin; sensibility markedly improved; died fourth day from asphyxia; carious fourth and fifth cervical vertebræ, bony point pressing cord completely softened. Reference: Brooklyn Med. Jour., 1889, i, 401.

CASE 79.—Operator, Lorenz; 1889. Dorsal region: duration, 2 years; infant; dorsal kyphosis, motor and sensory paraplegia, vesical and rectal paralysis; resection fifth, sixth and seventh dorsal arches; no improvement. Reference: Wiener Klinik, 1889, p. 127, Case 164.

CASE 80.—Operator, Gerster; 1889. Premeningeal suppurating fungosities; rapid improvement; recovery. Reference: N. Y. Med. Jour., 1890, p. 31.

CASE 81.—Operator, Davies Colley; 1890. Dorsal region; duration, 4 years; female, 4; paraplegia complete; removal second, third, fourth and fifth dorsal arches. Improved in one week; cured in four months. Reference: Chipault, Studies of Spinal Surgery; Obs. 63 and 65.

CASE 82.—Operator, McCosh, Starr, 1894. Dorsal region; partial anesthesia to touch, temperature and pain in legs, and loss of motion; tenth and eleventh dorsal laminæ removed; later, sixth, seventh and eighth dorsal, caries of bodies of vertebræ; discharging sinus; death 4 months later. Reference: Am. Jour. Med. Science, vol. cix, p. 95.

CASE 83.—Operator, Wheaton; 1890. Dorsal region; male, 24; motor paraplegia; resection sixth, seventh, eighth, ninth and tenth laminæ, cord appeared pressed backward; improvement, then collapse and death; post-mortem: fungus mass involving the anterior nerve roots. Reference: N. W. Lancet, 1890, p. 288.

CASE 84.—Operator, Eiselberg; 1890. Complete paraplegia; trephine; all vertebral muscles involved in tubercular processes; death. Reference: Wiener Med. Woch., 1890, col. 2219.

CASE 85.—Operator, Eiselberg; 1890. Paraplegia and vesical paralysis; extirpation large fungous mass; death. Reference: Ibid.

CASE 86.—Operator, Eiselberg; 1890. Cervico-dorsal region, paralysis upper extremities; at first improvement; recurrence in 6 months. Reference: Ibid.

CASE 87.—Operator, Eiselberg; 1890. Dorsal region; aged 10 years; complete paraplegia, cervical paralysis; removal of eighth and tenth dorsal arches; eight days later fungous mass of pachymeningitis; recovery in 10 months. Reference: Ibid.

CASE 88.—Operator, Eiselberg; 1890. Cervical region; cervical kyphosis, subclavicular abscess, partial paralysis of right arm; resection third, fourth and fifth cervical spinous processes; rapid recovery. Reference: Ibid.

CASE 89.—Operator, Delorme, 1892. Dorsal region; duration 11 months; male; progressive paraplegia, bladder and rectal symptoms, kyphosis; laminectomy; improvement, complete return of sensation, but not motion; sudden paraplegia, death from exhaustion; post-mortem, tuberculosis of bodies, no pulmonary or urinary lesions. Reference: Chipault, op. cit., p. 276.

CASE 90.—Operator, Gross; 1891. Dorsal region; duration, 1 year; female, 14; paraplegia, exaggerated reflexes, dorsal kyphosis, anesthesia, paralysis rectum and bladder; removal third, fourth, fifth and sixth laminæ; caseous matter size of nut pressing upon cord; improvement at first, increase in pulmonary tuberculosis; result, no improvement. Reference: Ibid., p. 259.

CASE 91.—Operator, Jalaquier; 1890. Cervico-dorsal region; duration, 7 months; male, 13½ years; complete paraplegia, recto-vesical paralysis, anesthesia; resection seventh C. and first D. laminæ; great hemorrhage; improvement in motion during first few days then disappeared; result, no improvement. Reference: Ibid., p. 262.

CASE 92.—Operator, Pique; 1891. Dorso-lumbar region; duration, 9 months; male, 26; complete paraplegia, reflexes exaggerated, anesthesia, paralysis of rectum and bladder; tenth D. and second L. arches removed, pus and caseous material pressing cord; tubercular meningitis; death twelfth day. Reference: Ibid., p. 272.

CASE 93.—Operator, Gardner; 1891. Duration, long time; female; paraplegia; removed two arches; pus and sequestra escaped from bodies; after some days slight return of motion; improvement. Reference: Australia Med. Jour., 1893, p. 121.

CASE 94.—Operator, Jones; 1891. Dorsal region; duration, 5 years; female, 31; complete paraplegia, anesthesia, dorsal kyphosis; removed arches eighth and ninth D., seventh displaced backward, soft membrane covering cord; improvement. Reference: Med. Record, 1892, p. 290.

CASE 95.—Operator, Boiffin; 1891. Cervical region; duration, 9 months; male, 17; exaggerated reflexes, head movements difficult; removed third, fourth and fifth C. arches, dura normal; improvement. Reference: Bull. Chir., 1892, p. 157, Case 2.

CASE 96.—Operator, Urban; 1891-92. Dorsal region; duration, 4 years; female, 19; paraplegia, kyphosis, 5-12 dorsal; temporary resection fifth, sixth, seventh, eighth, ninth and tenth arches; cord compressed at seventh, no pulsation below; death third day from syncope. Reference: Verhand. d. Deutschen Gesell. f. Chir., 1892, p. 211.

CASE 97.—Operator, Urban. Dorsal region; duration, 9 months; female, 54; pain in back, paralysis, atrophy of lower limbs and trunk, sensibility to pressure at eighth spinous process; resection third, fourth, fifth, sixth, seventh, eighth, ninth, temporary; cord compressed at eighth, no pulsation below, pulsation did not return till resection of angle of body; death from syncope. Reference: Ibid., p. 216.

CASE 98.—Operator, Guelliot et Moret; 1892. Dorsal region; duration, 1 year; female, 37; complete paraplegia, reflexes normal; resection twelfth dorsal arch, caseous material compressing cord; marked improvement. Reference: Union Medicale du Nord Est, 1891, p. 361.

CASE 99.—Operator, Chipault; 1890. Dorsal region; duration, some months; female, 4; abscess superior dorsal region communicating with medullary canal, recession of left eyeball, ptosis; artic. process left and arch of first D. bare and rough, post-tubercular meningitis, large mass of fungous material; next day eye symptoms improved and in two days disappeared; recovery. Reference: Chipault, op. cit., p. 245.

CASE 100.—Operator, Roux; 1890. Dorsal region; duration, 1 month; male, 16; partial paralysis of right leg, slight anesthesia below second lumbar vertebra; removal of fifth and sixth arches, pressure by vertebral body; increased paraplegia to complete motor, sensory, rectal and bladder paralysis, wound suppurated; no improvement. Reference: Ibid., p. 246.

CASE 101.—Operator, Roux; 1890. Dorsal region; duration, 3 months; aged 9½ years; complete paraplegia, rectal and bladder symptoms, fluctuating tumor between fifth and sixth dorsal; removal of fourth and fifth arches, granulation tissue in canal; slight improvement. Reference: Ibid., p. 265.

CASE 102.—Operator, Roux; 1891. Dorsal region; duration, 2 years; male, 21; complete paraplegia, rectal and vesical paralysis, no anesthesia, reflexes normal; great hemorrhage, removal 7-8 D. laminæ, pus right side of vertebræ from body of 8th; recovery; death from pulmonary tuberculosis one year later. Reference: Ibid., p. 264.

CASE 103.—Operator, Zavaleta. Dorso-lumbar region; duration, 4 months; male, 30 months; some paralysis of lower limbs, reflexes normal, no bladder or rectal symptoms, kyphosis 11th D. to 3rd L.; resection 12th D. and 1st L., dura much involved, tubercular granulations in canal, caries; recovery in two years. Reference: Ibid., p. 273.

CASE 104.—Operators, Zavaleta and Masi; 1892. Dorsal region; duration 1 year; male, 29; sensory-motor paraplegia, vesical and rectal paralysis; resection 7th, 8th, 9th D., no pulsation in dura, pressure due to fungous mass at 8th vertebra, also some sequestra; improvement at first, suppuration and death one month later from suppurative meningitis. Reference: Ibid., p. 274.

CASE 105.—Operators, Zavaleta and Ferrari, 1892. Dorso-lumbar region; duration, 3 months; male, 5½; kyphosis 11th D. to 1st L., ilio-femoral abscess, reflexes exaggerated, no paralysis of rectum or bladder; resection 11-12 D. 1st L., compression of cord by tubercular mass, carious body 1st lumbar, sequestra; suppurative meningitis; death. Reference: Ibid., p. 275.

CASE 106.—Operators, Zavaleta and Masi. Dorsal region; duration, 9 months; male, 3; paraplegia without pain, kyphosis; 7th, 8th, 9th dorsal arches removed, curettage of bodies; pulmonary edema following general sepsis some weeks later; death. Reference: Ibid.

CASE 107.—Operator, Reclus; 1882. Lumbar region; female, 22 months; fluctuating abscess of lumbar region extending to iliac fossa; opening, 3 fractured vertebræ found, small deposits found in a fungous mass, muscles of iliac fossa surrounded by tubercular processes; fistula remained for 6 months; improvement. Reference: Ibid.

CASE 108.—Operator, Reynier; 1882. Dorsal region; female, 30; fistulous tract at 8-9 D. leading to column; incision, resection of laminæ 8-9 D., removal of tuberculous material; wound closed; recovery. Reference: Ibid.

CASE 109.—Operator, Ollier; 1891. Sacrococcygeal region; male, 21; pain over coccyx in early life, abscess over sacrum for two years, bone exposed; extirpation of coccyx and posterior wall of sacrum and its lower pieces. Reference: Ibid.

CASE 110.—Operator, Mayer; 1846. Dorsal region; duration, 6 months; female, 28; accident followed by dorsal gibbosity, later complete paraplegia; arch of 7th D. removed and showed marks of compression; recovery of sensation followed by hyperesthesia, convulsive movements; death on 21st day. Reference: Ibid.

CASE 111.—Operator, Maisoneuve, 1860. Lumbar region; male adult; complete paraplegia; resection of several lumbar arches; no improvement. Reference: Ibid.

CASE 112.—Operator, Ollier; 1882. Dorso-lumbar region; duration, 5 months; female, 18; weakness of legs and lessened sensibility, four abscesses in dorsal and lumbar region; incision of dorsal abscess, removal of 7th arch and surrounding tubercular processes, incision lumbar abscess, resection 11th and 12th D., 1st and 2d L., tuberculous process removed; immediate disappearance of all pain, improvement, 3 months later fistula, 6 months later another abscess, 9 months later death, pulmonary tuberculosis. Reference: Ibid.

CASE 113.—Operator, Fornari; 1883. Dorsal region; female, 20; abscess near 7th and 8th dorsal vertebræ; operation by incision and resection of 7th and 8th arches; diffuse spinal pachymeningitis; death 20 hours later. Reference: Raccoglitore Medico, 1884, vol. i, p. 401, Chipault.

CASE 114.—Operator, Southam; 1889-90. Cervical and dorsal regions; duration 1 year; female, 3½; complete paralysis of all extremities; exaggerated reflexes and painful breathing; resection 6th and 7th cervical arches, removed growths, dura not pulsating; three months later resected 4th and 5th cervical and 1st dorsal; improvement after first operation slight; more marked after second; ninth month voluntary motion improved, and in 1892 could walk. Reference: Ibid.

CASE 115.—Operator, Southam. Dorsal region; female, 5; dorsal caries, complete motor paraplegia, incomplete sensation; resection 3d, 4th, 5th D. arches, some pus from corresponding vertebræ, no pulsation of cord; no improvement; death 9th day from pneumonia; Reference; London Lancet, 1890, vol. ii, p. 1300.

CASE 116.—Operator, Cotterell; 1895. Cervical region; duration, old; female, 13; Pupils dilated, paralysis of right arm, scar on neck from removal of glands 5 years before, projection forward of cervical vertebræ felt through pharynx, head fixed, gradually lost power over left arm and both legs; laminæ and spines of 4th, 5th and 6th C. vertebræ removed; dura bulged slightly; no evidences of dead bone found; skin and muscles sutured, wound closed by first intention; 2nd day, moved left hand; 6th day, moved left hand and arm; 9th day, moved right hand; 14th day, moved right arm above head; 3 months later, complete power over extremities and sensation returned; stiffness of neck removed under massage; complete recovery. Reference: London Lancet, 1896, I, p. 844.

CASE 117.—Operator, E. Percy Paton; 1895. Dorsal region; duration, 6 months; male, 8½. First noticed weakness in left leg, causing limping, later appeared in both; angular curve in lower dorsal region; thighs flexed so as to touch abdomen; loss of sensation; knee-jerks active, micturition and defecation normal; later all reflexes disappeared and loss of power over bladder and bowels; temperature very irregular, but no sign of suppuration. Vertical incision made over 7th, 8th and 9th D. spines; bleeding controlled with sponges; 7th and 8th laminæ removed; dura covered with layer of granular tissue; pus and caseous material discharged; closed with deep and superficial sutures and small drain left. Rallied from operation; temperature better, general condition improved; only partial improvement in the paralysis; control over micturition and defecation; 3 months later abscess involving left hip joint, most of head of femur gone, caseous material and pus removed; death 11 months after operation. Autopsy: Only region of laminectomy examined; gap where laminæ were removed much narrowed, filled with a tough, fibrous tissue; diseased foci found in bodies of several vertebræ. Reference: Ibid., p. 1351.

CASE 118.—Operator, Arthur Neve; 1888. Dorsal region; duration, 6 months; female, 18. Dorsal curvature and paraplegia; both legs much wasted and no voluntary movement; sensations of heat, cold and pain in both legs; general condition good. Removal of 8th and 9th laminæ; dura healthy and pulsated; wound closed by primary union. Increased pain at first; in 3 days could move left leg slightly. Result: No improvement; discharged one month after operation. Reference: Ibid., p. 1062.

CASE 119.—Operator, Arthur Neve; 1895. Lumbar region; duration, 2 years; male, 7. Complete motor and sensory paralysis; slight improvement with extension. Laminæ of 5th and 6th L. removed, dura healthy and cord pulsated; respiration became embarrassed; iodoform dusted in and wound closed without drain; healed; 10 days later wound opened and 1 ounce of pus escaped; sensation and muscular power completely regained in 6 months, but patient was much emaciated; complete recovery. Reference: Ibid.

CASE 120.—Operator, T. Sinclair Kirk; 1895. Dorsal region; duration, 1 or 2 years; female, 5½. Dorsal curvature, complete anesthesia of lower part of body and legs, bowel and bladder symptoms, had diarrhea, general emaciation. Menard's operation; incision 4 inches long, int. to tips of trans. processes on left side; 4th and 5th trans. proc., at junction with lamina and pedicle, artic., with ribs and portion of ribs laid bare; transverse processes removed, ribs cut and head and neck removed; diseases parts of bodies, i. e., cavity corresponded t obody of 5th and part of 4th D.; pleura punctured, but no harm done; wound closed. Two days after operation bowels improved; 4 days after, reflexes and sensation; 7 days after, wound healed; 10 days after, analgesia gone; 16 days after, muscular power returned; great improvement; complete return of sensation and muscular power, but curvature remained. Reference: British Medical Journal, 1896, ii, p. 1442.

CASE 121.—Operator, Halley, 1895. Dorsal region; duration two years; male, 27. Angular curvature at 5th and 6th D.; motor paralysis of lower extremities; no bladder or bowel symptoms. Removed laminæ of 5th and 6th D.; 4 weeks later, 7th and 8th. Wound healed by first intention, paralysis entirely gone in 10 days; recurrence and second operation; complete recovery. Reference: Jour. of Nerv. and Mental Diseases, 1896, vol. xxiii, p. 770.

CASE 122.—Operator, Alfred Parkin; 1893. Dorsal region; duration, 6 months; male, 8. Partial paraplegia, partial bladder and bowel symptoms; extension unsuccessful. Removal of 6th to 9th D. laminæ; cord flattened, but pulsating; caseous mass anterior to the cord and much dead bone removed; wound closed and drain left in; spine fixed by means of plaster jacket. Three days after operation, knee jerk on right side; 8 days after, on both sides; 3 months after, sat up in bed; general health good; deformity remains; complete recovery. Reference: Brit. Med. Jour., 1893, I, p. 796.

CASE 123.—Operator, Alfred Parkin; 1893. Cervical region; duration, 6 years; male, 9. Partial paraplegia, knee-jerks and ankle clonus absent; 6th and 7th C. spines prominent; extension followed by complete paraplegia; diaphragm did not act in respiration. Sixth C. spine and lamina removed and cord exposed, 4th and 5th reduced to mass of connective tissue; all compression removed, followed by pulsation; diaphragm commenced to act. Day after operation rigidity of limbs less, knee-jerks returned, abdomen moved in respiration; wound healed quickly, all symptoms gone in 2 months. Complete recovery, but death from tubercular meningitis. Autopsy: Caseating glands found in front of bodies of 3rd, 4th and 5th vert.; cord normal; brain showed usual appearance of tubercular meningitis. Reference: Ibid., 1894, ii, p. 699.

CASE 124.—Operator, Alfred Parkin, 1893. Dorsal region; duration, 3 years; female, 8. Kyphosis, lordosis in lumbar region, advanced scoliosis, dorsal and lumbar spines convex to right, head and cervical part to left; rigidity of legs, knee-jerks feeble, sensation unimpaired; extension increased trouble. Spines and laminæ of 10th, 11th and 12th D. cut away and caseous material in front of cord removed. Next day knee-jerks returned, rigidity of legs less marked; wound healed leaving small sinus for one month; general condition good; later developed psoas abscess; recovery. Reference: Ibid.

CASE 125.—Operator, Alfred Parkin; 1893. Dorsal region; duration six months; male, 10. Both legs rigid, reflexes present, complete anesthesia and analgesia up to the nipples in front and angle of scapula behind; shooting pains in back; 11th and 12th D. vert. could be moved laterally; their spines and laminæ removed and cord bulged into wound, but no caseous material found. Next day could move legs; wound healed quickly, no rise of temperature; all symptoms gone in 4 months; complete recovery. Reference: Ibid.

CASE 126.—Operator, Alfred Parkin; 1893. Cervical region; duration uncertain; male, 3. Seventh C. and 1st D. spines prominent; could not walk well, knee-jerks lost later, other reflexes normal, legs much emaciated, no loss of sensation, respiration only by means of diaphragm. Laminæ 6th and 7th C. removed and granulations taken away. Two days later respiratory muscles commenced functionating; all symptoms improved; result, great improvement. Reference: Ibid.

CASE 127.—Operator, Alfred Parkin, 1894. Lumbar region; duration, 2 years; female, 8. Prominent boss in lumbar region; rigidity of legs, but could be drawn up; walked only when supported, knee-jerks absent; bowels and bladder acted involuntarily; sensation in feet and legs impaired. Spines and laminæ of 2nd and 3rd L. cut away and caseous material removed from corresponding bodies. Immediate improvement; wound did not heal well, had to be scraped twice; 4 months later, 2 small sinuses; all symptoms improved; psoas abscess developed. Improvement, but general tuberculous tendencies. Reference: Brit. Med. Jour., 1893.

CASE 128.—Operator, Trendelenberg, 1896. Dorsal region; duration, 5 years; male, 11. Sensibility unimpaired, spasmodic paraplegia, bowels normal, reflexes exaggerated. Resection of 7th C. and 1st, 2nd, 3rd D.; dura thickened with granulations. No improvement from operation. Reference: Verhandlung der Gesell. f. Chir. Kong., xxviii.

CASE 129.—Operator, Trendelenberg, 1897. Dorsal region; duration, from early childhood; male, 17. Three years before began to limp; 1 year later, walking difficult, markedly spasmodic; unable to walk for last year; marked curvature to left and deformity of thorax; loss of sensation below umbilicus; spasmodic paraplegia; some movement of toes possible; no bladder or bowel symptoms; reflexes exaggerated. Fifth to 7th D. laminæ removed; cord discolored and twisted; lumen of canal narrowed. Loss of power over bladder after operation; later regained; spasmodic contraction of legs; 3 years later could walk; never had an erection since. Recovery. Reference: Ibid.

CASE 130.—Operator, Trendelenberg, 1898. Dorsal region; duration, 2 years; female, 14. Sensibility on right side normal, absent below knee on left side; muscular power strong on left side, slightly reduced on right; standing or walking became impossible; bowels normal; left patellar reflex remains, right absent. Eleventh and 12th D. and 1st L. laminæ removed; canal narrowed. Rapid disappearance of symptoms. Recovery. Reference: Ibid.

CASE 131.—Operator, Trendelenberg, 1898. Dorsal region; duration 3 years; female, 14. Sensibility normal, paralysis of left side, paresis on right to great degree; unable to walk or stand. Ninth and 10th laminæ removed, narrowing of canal. Constant improvement; recovery. Reference: Ibid.

CASE 132.—Operator, Trendelenberg, 1898. Dorsal region; duration, since early childhood; male, 18. No effect on sensibility, unable to walk, incomplete control over bowels, reflexes increased. Third to 6th dorsal removed, narrowing of canal. No improvement. Reference: Ibid

CASE 133.—Operator, Trendelenberg, 1899. Dorsal region; duration, 4 years; male, 9. Sensibilities intact, spastic paraplegia, slight muscular power over legs, reflexes increased. Seventh to 10th D. laminæ removed; caseous material removed from arch of 10th, which was carious. Loss of power over bladder and rectum, later returned; had priapisms; continued improvement. Still under treatment; condition worse than before operation. Reference: Verhand. der Gesell. f. Chir. Kongress, xxviii.

CASE 134.—Operator, Trendelenberg, 1898. Dorsal region; duration, 15 years; male, 18. Sensibility, complete anesthesia below crest of ilium; spastic paraplegia and involvement of ilio-psoas muscle; loss of power over bladder, incomplete over rectum; reflexes increased. Removal of laminæ, 8th and 9th dorsal; epidural abscess size of cherry. Subsidence of anesthesia, improvement in bladder and bowel symptoms; gradual improvement; recovery. Remarks: Symptoms pointing to another abscess. Reference: Ibid.

CASE 135.—Operator, Trendelenberg, 1899. Dorsal region; duration 17 years; male, 36. Sensibilities dulled, paresthesia, weak movements, can walk on crutches; marked spasms, incontinence of urine and feces, bowels same; reflexes increased. Removal laminæ 2nd to 4th dorsal, narrowing of canal. Movement of legs rapidly returned; bladder and bowel symptoms much improved; recovery. Still under treatment. Reference: Ibid.

CASE 136.—Operator, Ellenwood, 1894. Dorsal region; duration, 10 months; male, 26. Struck by log; had secondary syphilis; complete paraplegia, diagnosed as Pott's disease. Fourth, 5th, 6th and 7th D. arches removed; abscess around right 5th trans. process connecting sequestrum in canal; no drainage. Small sinus; remaining, little improvement. Death from pulmonary tuberculosis. Reference: Occidental Med. Times, 1894.

CASE 137.—Operator, Lloyd, 1892. Case 1. D. region; duration, more than 2 years; boy, between 7 and 8 years old. Sharp kyphosis, apex at 7th dorsal; abscess with fistula opening between the 8th and 9th ribs of right side, about 3 inches from median line posteriorly; physical condition bad; sacral bedsores; paraplegia, anesthesia and vesico-rectal paralysis. Incision made along margin 8th rib from sinus toward spine about 2 inches; resection of rib; during dissection along the sinus pleura was opened and fluid evacuated from an encapsulated cavity; large abscess finally opened communicating with bodies of 7th and 8th vertebræ; bone debris, sequestra and granulation tissue scraped away; articular processes of both vertebræ found eroded and transverse process loose. Removal of these portions allowed entrance to vertebral canal and the removal of considerable debris pressing on cord. Gradual improvement in symptoms; anesthesia less marked, control of bladder, then of rectum; motion in flexors and adductors of thighs; then pulmonary involvement and death in 8 months after operation.

CASE 138.—Operator, Lloyd, 1892. Case 2. D. region; duration 1 year; boy, 10 years. Kyphosis at level of 10th dorsal with sinuses along back and psoas abscess of large size; paraplegia, partial anesthesia, some rectal and vesical paralysis, very septic, contractures of thighs and legs. Incision from 8th to 12th dorsal; muscles infiltrated with tubercular tissue; during curettage transverse process, articular process and part of right lamina of 10th vertebra removed; cord compressed by granulation material and a sequestrum from body of 10th laminæ, 9th, 10th and 11th vertebræ removed and vertebral canal curetted; pulsation returned in cord. Decided improvement; could soon move legs; had control of bladder and rectum and sensation normal. Contracted measles and died 10 months later while still improving. Still had sinuses communicating with bare bone.

CASE 139.—Operator, Lloyd, 1893. Case 3. L. region; duration 7 months; girl, 7 years. Tubercular tumor with psoas abscess over 2nd lumbar vertebra. Partial paraplegia, vesico-rectal paralysis; great pain in back and legs; sacral bedsores; incision into tumor and curettage, opened spinal canal between laminæ of 2nd and 3rd vertebræ close to transverse processes of left side; removal of laminæ 1st, 2nd and 3rd L., caries body of 2nd; psoas abscess opened in Scarpa's triangle; this communicated with posterior abscess; drainage. Improvement, but soon showed pulmonary tuberculosis, from which she died within one year.

CASE 140.—Operator, Lloyd, 1893. Case 4. D. region; duration 2 weeks; girl, 7 years. Kyphosis level of 5th D. vertebra; plaster jacket; whooping-cough, sudden paraplegia and anesthesia below umbilicus, vesico-rectal paralysis. Laminectomy 3rd, 4th, 5th and 6th dorsal; compression of cord from displacement of body of 5th vertebra, which was carious and almost destroyed, probably had given way during a fit of coughing; no pulsation in cord below this area, even after scraping away the compressing portion. No improvement. Death from respiratory difficulty due to ascending degeneration of cord.

CASE 145.—Operator, Lloyd, 1898. Case 5. C. region; duration 1 year; man, 24 years. Torticollis, posterior pharyngeal abscess, tingling in arms and lower limbs, numbness; no paraplegia, but sense of sluggishness in muscles and weakness; reflexes exaggerated. Incision parallel to post. margin of sterno-cleido-mastoid, right side, careful dissection; abscess opened, trans. process and ant. surfaces 3rd and 4th vert. eroded and bare; necrosis inferior articular process; 3rd opening canal; vertebral artery not injured; small focus granulation tissue about articular process extending slightly into canal. This patient developed tubercular disease about knee, which was operated on 6 months later. At this time all numbness and spinal symptoms had disappeared. He then developed dulness of both pulmonary apices. Sent to mountains and now, June 6, 1900, is well except for a small sinus in neck not communicating with bone.

CASE 146.—Operator, Lloyd, 1893. Case 6. D. region; duration long time; boy, 12 years. Had been paralyzed a long time before coming to hospital. Complete paraplegia and anesthesia below umbilicus. Great pain in back and legs, vesico-rectal paralysis; slight displacement backward of 4th dorsal spine. Laminectomy 2, 3, 4, 5 6 dorsal; pachymeningitis with great thickening of dura from 2nd to 5th dorsal; leathery mass removed; some hemorrhage, controlled by temporary packing; dura opened in several places, but readily sutured, cord softened. No improvement; death from exhaustion 3 months later.

CASE 147.—Operator, Lloyd, 1893. Case 7. D. region; duration 10 months; girl, 5 years. Paraplegia, anesthesia from point between umbilicus and symphysis; vesico-rectal paralysis; sacral bedsores, also bedsores over heels; reflexes abolished. Laminectomy 5, 6, 7, 8 dorsal; mass grayish granulation material involving intervertebral fat and interspinous ligaments; small carious focus in body of 6th vertebra; severe compression of cord; no return of pulsation, softened. No improvement; gradually increasing paralysis and finally death 4 months later from respiratory failure due to ascending degeneration.

CASE 148.—Operator, Lloyd, 1894. Case 8. D. region; duration some months; boy, 9 years. Very large and sharp kyphosis from 2nd to 9th dorsal; paraplegia, anesthesia below umbilicus, vesico-rectal paralysis; reflexes abolished; contracted thighs, pain in back and limbs, especially on motion. Laminectomy 4th, 5th, 6th and 7th D., cord completely severed between greatly thickened interspinous ligaments of 5th, 6th and 7th spines and body of 6th. No improvement. Death from pyelitis 2 months later.

CASE 149.—Operator, Lloyd, 1894. Case 9. D. region; duration, 6 months; boy, 11 years. Sinus at angle of 7th rib, which was bare; fluid in pleura, fluctuating tumor between sinus and spine; unable to walk; reflexes exaggerated, pain in back, chest and limbs; spastic gait. Incision enlarging sinus backward, resection rib 2 inches, opening pleura, pus evacuated, communication sinus with fluctuating tumor, incision extended; granulations and several sequestra found, 1 being head of rib; piece of rib removed; vertebral canal opened alongside of transverse process; Post. nerve roots injured during exploration. Lamina of 9th vert. removed and some bone debris curetted from around cord. All symptoms due to spinal pressure disappeared immediately; could walk in 2 weeks. Death from exhaustion from large suppurating wound involving pleura 6 weeks later.

CASE 150.—Operator, Lloyd, 1895. Case 10. D. region; duration, 2 years; girl, 7. Paraplegia, anesthesia, vesico-rectal paralysis; reflexes almost if not quite abolished; bedsores, sacrum and heels; pain, back and legs and abdomen; cystitis very marked. Laminectomy 2nd, 3rd and 4th dorsal; tubercular mass involving ligamenta subflava and interspinous ligament between 3rd and 4th spines; transverse process and articular process (superior left) of 3rd vertebra eroded; cord greatly compressed; no pulsation after or before removal of mass. No improvement. Death from pyelitis 5 months after operation.

CASE 151.—Operator, Lloyd, 1894. Case 11. C. region; duration, more than 1 year; girl, 6 years. Paraplegia, anesthesia including arms partially; occasional attacks respiratory difficulty; bedsores, vesico-rectal paralysis, abolition reflexes; tumor over 5th and 6th cervical vertebræ. Laminectomy 5th and 6th cervical; tubercular granulations springing from spines 5 and 6, and eroding left lamina of 5th vert.; compression of cord by pachymeningitis and tubercular granulations and bony debris; pulsation not satisfactory after compression removed. Slight improvement only. Could use arms but not legs. Death from respiratory failure 3 months after operation.

CASE 152.—Operator Lloyd, 1895. Case 12. D. region; duration, 3 months; girl, 7½ years. Partial paraplegia; reflexes normal; no anesthesia; pulmonary involvement left apex; tumor over 12th dorsal. Laminectomy 11th and 12th dorsal, 1st lumbar; caries arch 12th dorsal and spinous process involving vertebral canal for short distance. Immediate and complete recovery. In few weeks could walk well without aid of any kind. Death 8 months later, pulmonary tuberculosis.

CASE 153.—Operator, Lloyd, 1896. Case 13. D. region; duration, 7 months; boy, 4 years. Complete paraplegia, anesthesia, vesico-rectal paralysis, abolished reflexes; great pain; sharp kyphos 11th dorsal and 3rd lumbar. Laminectomy 11th and 12th dorsal, 1st and 2nd lumbar; pressure due to tubercular debris, and large sequestrum completely occupying vertebral canal; cord absolutely separated for space of 1½ inches, except for a fibrous band. No improvement.

CASE 154.—Operator, Lloyd, 1898. Case 14. L. region; duration, 2½ years; boy, 5 years. Psoas abscess, sinus at tip of coccyx into rectum and gluteal region. Very painful on pressure in region of 4th lumbar spine; does not attempt to walk; reflexes exaggerated; amyloid liver, spleen also enlarged; marked lumbar lordosis. Incision along lumbar region opens abscess and allows of removal of sequestrum from body and transverse process of 4th lumbar; lamina also eroded and removed; granulations scraped away from cauda and from abscess cavity. Complete recovery of function; can walk well without support.

(To be continued.)

JOINT TUBERCULOSIS.*

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The discussion of tuberculosis of the hard and soft parts has been so general in the past years that it would hardly seem necessary at this date to emphasize the extent or the importance of this infection in the production of bone or joint disease, but the fact still remains that a large proportion of cases of joint tuberculosis are not recognized until the period of actual destruction has taken place. Tuberculosis of the joints, as of the lungs, requires for its arrest a diagnosis at the very beginning of the infection. At this time, while it is a purely local process, arrest and cure are perfectly feasible; in the later stages, destruction of bone or joint or limb or life is probable. It is of the utmost importance, therefore, that a recognition of the earliest signs should be urged upon the general practitioner, so that curative measures may be instituted at the earliest possible moment. Three things are absolutely necessary in order to accomplish this result: 1. The practitioner must first recognize that joint tuberculosis is at the beginning a purely local process; that the focus is small; that local and constitutional symptoms will not present themselves in any positive palpable or visible symptoms so far as the ordinary evidences of acute inflammation are concerned. As a rule, there will be neither heat, nor swelling, nor redness, nor recognizable pain. I do not mean by this that there will not be recognizable symptoms; these are nearly always present, but they are of a different kind, as will be shown later. 2. The practitioner must rid his mind of the idea that joint tuberculosis originates only in the children of tubercular parents. A visibly healthy child, of apparently absolutely healthy ancestry, can, and often does, have local tuberculosis. 3. He must absolutely divest himself of the old idea that all joint pain is rheumatic. This last error is the most difficult of all to remove, as it is so firmly fixed in the minds of the profession and of the laity, and is most pernicious in its results.

As already stated, the evidences of acute inflammation are rarely present. It is a quiet struggle that is going on deep in the recesses of the epiphysis of the bone, but it is a desperate one. The tubercle bacillus has gained a foothold, owing to some local traumatism or temporary constitutional depression that has lowered the individual's resistive power. The attack of the enemy is immediately the signal for phagocytic defense; the invader must be destroyed, or, failing in this, must be walled off and isolated from the system. In a previously healthy individual victory will crown the efforts of these defending cells, if the physician will but lend his aid to prevent that stage beyond hyperemia which we recognize best by the term inflammation. Alas! Too often the surgeon waits for the flame to show itself, when he should have made his diagnosis while there was but the smouldering ember! It is then too late to check disastrous results. It is a discredit to any surgeon to wait for violent or inflammatory symptoms before he makes a diagnosis; both diagnosis and treatment are demanded at the very inception of the invasion. With early diagnosis and early treatment, hundreds of crippling results will be arrested.

After a slight and often unrecognized injury, a child begins to limp. Let no physician imagine that a child limps "from habit;" a child does not wish to be hampered in its play, and it will limp only from a cause. To find that cause is the duty of the physician; he will not find it by looking for tenderness or pain, although these may be exceptionally present, but first in rigidity of the muscles (muscular spasm), protective rigidity, in the region of the joint affected. The muscles are all placed upon guard, and diminished mobility is the result. Fortunately, Nature at once recognizes the invasion of the enemy, and uses her best efforts to secure the condition most helpful for recovery. Nature puts the part as thoroughly at rest as is possible under existing mechanical conditions by fixing the joints in the best attainable position and preventing motion, but unfortunately in doing this she is compelled to bring the two joint surfaces into more positive apposition. This rigidity can be recognized in the first few days, if the patient is stripped and placed in a horizontal position; a comparison of the position of the limbs and the motions possible at any given joint can then be fairly instituted. With the patient standing, or clothed, any surgeon is liable to error, especially if the joints of the lower extremities are involved. Even for an examination of the shoulder or elbow, patients should be stripped to the waist. I am inclined to attribute a large proportion of errors to insufficient examination. A careful investigation, under these circumstances, will, even in the first few days of the disease, disclose this limitation of motion in some direction. At the knee we will usually find that the hamstring muscles, being the stronger, have carried the knee into a state of flexion, thereby also relieving joint strain; at the hip, the psoas, iliacus and anterior muscles will be found in a state of excessive tension, while the entire periarticular group will also be rigid and on guard. Bringing the pelvis into its proper relation to the vertebræ, by flexion of the sound limb upon the chest, will at once show the deviation of the affected limb from its normal relations to the ilium; or, if the popliteal space is brought down upon the table, the pelvis will be so tilted that a compensatory lordosis of the spine is necessitated. In early examination, movements of the femur may drag the pelvis after it only in one direction, but a few days later all the muscles will be on guard, and it will be noted that the pelvis follows the thigh bone in all directions: adduction, abduction, flexion, rotation, etc.

Pain.—Pain is frequently entirely absent or may exhibit itself by a reflected pain, or by distress along the course of a nerve and at a distant point, as in the knee in hip-joint disease, or down the legs or in the abdomen in spinal caries. The night-cries so frequently present in joint disease are an evidence of deep pain, caused by the sudden resumption of muscular control when any motion of the limb during sleep arouses the muscles to sudden and violent action. The patient, after a scream or cry, will be relieved by the control secured by muscle rigidity, and will sink to sleep only to have the process repeated at irregular intervals. Tenderness may be entirely or partially absent; in fact, is rarely present over a tubercularly diseased vertebra. Rigidity is evidenced when attempts are made either at flexion, extension, lateral bending or rotation, and is a much more reliable sign. Tenderness even at the ankle and wrist in tuberculous cases is often wanting. Induration and thickening, however, are usually present early, and become marked as the disease progresses; comparison with the opposite joint will best discover the amount. Heat or redness is rarely visible.

* Read by title in the Section on Surgery and Anatomy, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

Heredity.—Every individual, and especially every child, is liable to be invaded by tubercle bacilli, no matter how healthy in itself, no matter what the condition of the parents. The child of tuberculous parents is far less able to resist the onslaught of these bacilli, and it was this non-resistance of cells that was recognized by the older pathologists as the "scrofulous" or "tubercular diathesis." Healthy cells, however, may be temporarily rendered non-resistant by disease, general or constitutional, or by injury producing hyperemia or inflammation. During this stage, tubercle bacilli introduced through a slight abrasion, or through the blood, may secure a lodgment; phagocytic action being temporarily reduced may not be able to overcome them, and a foothold is secured in the epiphysis, which is in young children an especially favorable focus owing to its great activity. What we mean by tubercular heredity, therefore, is simply congenital cell non-resistance, and such a child will be continually exposed to the dangers of infection from even trifling traumatic or other causes, while such causes in the truly healthy child would be quietly and successfully repelled. Let it not be forgotten, therefore, that there are seasons and conditions in the strongest child when, through temporarily reduced vitality, a tubercular infection may take place.

Rheumatism.—A large majority of all cases of tubercular hip disease are treated for weeks, even months, sometimes even up to the stage of suppuration, for so-called "rheumatism." The mistake is utterly inexcusable, for rheumatism of a single joint in children ought to be absolutely thrown out of the question, unless positive symptoms are in evidence. The symptoms of true rheumatism are always sufficiently marked to render the diagnosis clear, consequently if every case of joint disease which is unaccompanied by positive indications is viewed from the beginning with the probability of its being tubercular, the greatest benefit to mankind will be secured. I have never seen injury resulting from an error of diagnosis in this direction; I have seen hundreds of most lamentable results from the "rheumatic" mistaken diagnosis. Moreover, the treatment for the more grave disease is never injurious, even granted that the rheumatic element is present. The symptoms of the two conditions differ so widely that only care is necessary for the differentiation.

Treatment.—Diagnosis being assured, the indications for immediate and early treatment are positive. One week of rest at the inception of a tubercular invasion will accomplish more than months at a later period after a tubercular focus is established. A large proportion of the cases of invasion can be warded off if the proper treatment is commenced within the first ten days. The treatment of joint disease should follow certain positive lines; the methods of securing results will differ greatly with individuals, as might be anticipated. Rest of the affected joint; control of muscular action; relief from weight-bearing; abundance of sunshine, fresh air and good food are the fundamental ideas. Mechanically, the chief object is to prevent the addition of hyperemia and inflammatory action to the cell conflict already inaugurated against the invading enemy. Therapeutic and hygienic measures are of the greatest importance. A general definite plan of treatment is all-important; the particular method, or the particular splint, to be employed is not of much consequence.

Conclusions.—1. Diagnose early; treat early. 2. Do not look for positive inflammatory signs as indications of tubercular invasion; the symptoms are entirely different, but are equally positive, if a careful examination is made, muscular rigidity being one of the earliest and most reliable. 3. Discard entirely the existence of rheumatism of a single joint in children.

PERMANENT CATHETERIZATION.*

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Varying opinions are held as to the usefulness of the retained catheter after perineal operations upon the posterior urethra. Most authorities, in discussing external urethrotomy, pass the retention catheter without comment, advocating the use of the short perineal drainage-tube only. By some it is advised that continual catheterization be employed for twenty-four or forty-eight hours, and that at the end of that time intermittent catheterization be begun. A few favor retention of the catheter for a longer period, varying from three to six days. By no writer with whose counsels I am familiar are we taught to leave the catheter in after perineal urethrotomy until the urethral and perineal wounds are firmly healed.

Permanent catheterization for a period as long as twenty days is common practice in hematuria, having its origin in trauma of the prostate, and, as is well known, it is often indicated and employed in certain cases of retention of urine, the patient being placed under such circumstances that regular sterile catheterization can not be practiced. In such cases a permanent catheter, far from causing distress, often affords complete relief from pain and strangury, and even in cases of pronounced infection it often gives excellent service. It relieves tension, diminishes cystitis and renders the subsequent passage of instruments easy by maintaining or even increasing the caliber of the urethra.

The practice of permanent catheterization fell into disrepute before the advent of clean surgery, it having been observed that the continuous presence of the catheter in the bladder and urethra produced congestion at the vesical neck, cystitis and a mechanical urethritis. Abscesses also developed occasionally in the periurethral tissues at the scrotal angle, due in all probability to pressure exercised by the instrument.

Inflammation of the bladder may occur during permanent catheterization, as a direct extension of a urethritis or from decomposition of the small quantity of urine which always moistens the intravesical end of the catheter. To prevent this complication we are generally advised to change the catheter often and to flush the urethra twice daily with 1 to 10,000 corrosive chlorid solution, or 1 to 1000 silver nitrate, and to irrigate the bladder as often with 4 per cent. boric acid solution.

It occasionally happens, however, that the membranous and prostatic urethra, after external urethrotomy, particularly along the line of incision, is so sensitive and deformed that the changing of the catheter would be an exceedingly difficult and exquisitely painful procedure. After perineal section involving removal of a portion of the posterior urethra and anastomosis, the passage of the catheter is, as is well understood, extremely difficult of execution.

If, after such an operation, a large soft-rubber catheter can be retained in the urethra, its tip barely projecting into the bladder, until the urethral and perineal

* Presented to the Section on Surgery and Anatomy, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

wounds have completely healed, or firm granulation tissue fills the perineal defect, it will, as can readily be seen, do away with much of the tedious work of after-treatment in the case. The writer has been surprised to discover with what great tolerance the urethral mucosa suffers the presence of a soft-rubber catheter. This tolerance on the part of the mucous membrane seems to be more marked when a catheter of large size is used. The reason for this is not altogether clear. It is possible, however, that when a large catheter is used, the lumen of the urethra being quite filled, and the possibility of movement of the catheter in the urethra being thereby restricted, irritation of the mucosa as the result of friction is not so apt to occur as if smaller instruments were used. Moreover, the very presence of a large catheter in the posterior urethra extending into the bladder doubtless does much to relieve spasm at the vesical neck by mechanically preventing contraction of the cut off muscles. The effect here is perhaps similar to that produced by dilatation of an irritable and contracted sphincter ani.

In a case observed by the writer, after a perineal section for impassible traumatic stricture involving excision of a huge scar, resection of nearly all of the membranous urethra and urethral anastomosis, a No. 26 French scale, soft-rubber catheter was retained in the urethra for seventeen days, and in that time the patient neither suffered loss of sleep nor complained of pain. The temperature never rose above 99.4 F., nor the pulse above 80. As for discharge, there was just enough of mucopurulent character to slightly moisten the meatus, the lips of which were somewhat pouting and red. This patient received, by mouth, three times a day, five grains of salol and five grains of cystogen. The bladder was washed out twice daily with warm 4 per cent. boric acid solution, and once every other day an ounce or more of hot solution of 1 to 5000 potassium permanganate was injected between the catheter and the urethral mucosa. After the sixth day the discharge from the urethra ceased, and the flushing with potassium permanganate was discontinued. It seemed that the mucosa of the urethra had now become quite tolerant of the catheter. The discharge did not reappear. The bowels were not allowed to move during the first two weeks. At the end of this time they were cleaned with Apenta water. When the catheter was removed, healing was quite complete and the subsequent care of the case was easy. In this instance intermittent catheterization was hardly to be considered, and permanent retention of the catheter left nothing to be desired. In another case, one of traumatic stricture with consequent fistulæ of the membranous urethra of thirteen years' standing, a No. 26 Charrier scale catheter was left in after perineal section and urethrotomy, for twelve days. The perineal wound healed solidly during this time. After removal of the catheter, the membranous urethra was found to be large enough to readily admit the passage of a No. 32 French steel sound. This striking increase in the caliber of the urethra was doubtless due to absorption produced by the permanent dilatation. It has been interesting to the writer to note with what facility sounds several sizes larger than the retained catheter can be introduced after removal of the latter.

In a third case, after operation for the relief of a large suppurating and much operated perineal fistula, the process of repair being slow, a No. 26 French rubber catheter was left in the urethra for sixty-five consecutive days. After the tenth day, pain in the bladder and the discharge from the urethra having ceased, the patient began to walk about, the urine being caught in a rubber urinal tank strapped to the thigh. Three weeks after the introduction of the catheter this man made a journey into an adjoining state, wearing the instrument without discomfort, returning after four days, none the worse for the trip.

The writer has recently employed permanent catheterization, after perineal lithotomy, in two cases. The catheter was kept in for two weeks in each instance. During this time no attention was paid to the condition of the urethral and vesical mucosæ except in so far as administration by the mouth of salol and cystogen may be interpreted as such attention. Neither urethra nor bladder was flushed at any time. There was no apparent cystitis and no discharge from the urethra, the perineal wounds healing promptly.

The observations in these cases would seem to teach that the danger of mechanical urethritis and cystitis as the result of the presence of a retention catheter has perhaps been somewhat overestimated, that after such a catheter has been in contact with the urethral mucosa for several days there develops a distinct tolerance on the part of the urethra for the instrument, and that large catheters are rather to be chosen for permanent retention than smaller ones. A large catheter is much more easily retained than a small one.

SUGGESTIONS FOR THE RECONSTRUCTION OF SYPHILITIC NOSES.*

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Nasal deformity from syphilitic destruction of bone and cartilage is a very frequent result of the tertiary stage of the disease. The disfigurement varies in extent and character, but is always very noticeable because of the importance of the nose in facial contour. The mental distress of the patient is usually acute, because the disfigurement is associated in the public mind with a loathesome and disgraceful disease. The fact that syphilis may be inherited or be acquired in an innocent manner avails little in the public's estimate of a person carrying ever upon his countenance the well-known mark of sexual impurity. Nearly every other lesion of syphilis may be concealed from public observation, or may at least be attributable to diseases of a less dishonorable nature. The patient with the sunken or distorted nose of syphilis has, however, scarcely any shield to protect him from impertinent scrutiny and the innuendo that his tissues are contaminated with the scourge usually due to unchastity.

These circumstances make the condition one to appeal to the sympathy of the surgeon, whose every effort should be given to the consideration of adequate operative relief.

My attention has been forcibly directed to this surgical problem, because I have recently seen more than one who had in vain applied for relief to the general surgeon and nasal specialist. For years past the correction of deformities of the face has been of increasing interest to me; and I have been more and more gratified at the results obtainable by intelligent operative measures. The literature of this surgical field has become quite voluminous, but it will be found to repay those who take time to study it.

Syphilitic deformities of the nose may be roughly divided, for the present purpose, into: 1, those in which

* Read by title in the Section on Surgery and Anatomy, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

one or both alæ, the lobule, the columella, or other parts of the external nose have been ulcerated away; 2, those in which the internal supports of the cartilaginous nose have been destroyed and the middle of the organ has fallen inward, causing a transverse depression below the nasal bones; and 3, those in which a similar internal destruction has been followed not only by the transverse depression but a cicatricial invagination of an ala, both alæ, or the end of the nose. The more serious cases may be complicated with necrotic perforation

Fig. 1.—Destruction of alæ and lobe of nose, due to syphilis.

of the hard palate, loss of portions of the alveolar process of the upper jaw, cicatricial changes from ulcerative destruction of the soft palate; and also by actual loss of portions of the sunken or retracted external nose. The first group contains the cases which are improved by the comparatively simple plastic procedures; and hence they are not often refused treatment. It is not difficult to make a new ala out of the tissues of the cheek by cutting a flap with its pedicle at the side of the nose, and swinging it around into the gap in the outer wall of

Fig. 2.—Destruction of alæ, columella and portion of hard palate, due to syphilis.

the naris. A columella may be constructed with sufficient ease by cutting a column of skin and muscle from the middle of the upper lip and turning it upward. One operation, supplemented by a little trimming or modelling of the parts at a later date, is usually sufficient to ensure a fair reconstructive result.

The patients who belong to the second and third groups, are those who meet with discouragement when they apply for surgical relief; and yet much, very much, may be done to lessen the horrid deformity of countenance and to alleviate the despondency due to the consciousness of facial ugliness. I have seen evidence that some members of the medical profession believe that these syphilitic noses should go untouched, because the constitutional taint may militate against healing after operation wounds. This opinion is fallacious. It would not be proper to operate on a nose the seat of active syphilitic inflammation; but, after the active process has ceased, incisions heal as promptly in syphilitics as in healthy persons. I have never seen any more reason to hesitate to cut bone, cartilage and skin in the former than in the latter class of patients.

The simplest form of sunken nose is that in which the organ has caved in, as it were, at the middle of the dorsum. Thus the lobule is thrown upward, the plane of the openings of the nostrils is more or less vertical instead of horizontal, and projection of the cartilaginous nose is greatly reduced. To remedy the deformity, the tip of the nose must be brought downward and forward. This is usually to be done by a free transverse cut across the nose at the point of greatest depression. This incision permits the operator to pull the lobule and alæ downward, until the tip of the nose stands out prominently from the plane of the face, and the nostrils with the intervening columella lie in a horizontal plane. The detachment of the lower part of the organ

Fig. 3.—Reconstructed nose after syphilitic deformity This nose was much sunken before operation.

from the nasal bones above and its reposition leave an opening into the nasal chamber extending across the middle of the face. This space must be filled with flaps of tissue sufficiently large not to draw the lower part of the nose upward when healing takes place; and sufficiently rigid to maintain a straight or a nearly straight line along the dorsum or bridge of the nose.

Various methods of operating have been devised. Some surgeons have inserted metallic supports with legs resting on the nasal bones or the frontal bone above, and the superior maxillary bones below. These foreign bodies are not very desirable occupants of reconstructed syphilitic noses. I prefer to build, of superimposed flaps, a thick fibrous wall which will maintain its shape; or else to hold such a reconstructed wall in proper shape by some form of inconspicuous spring attached to a spectacle frame.

Recently I operated on such a case with gratifying result, by turning into the gap two pairs of cheek flaps and bringing down two flaps from the forehead. The first cheek flaps were turned into the gap with the skin surface toward the nasal cavity. Subsequently two flaps were made from the frontal tissue between the eyebrows and rotated downward on top of the cheek flaps. At a still later period two more cheek flaps were cut and rotated on the top of the new portion of nose. Minor operations were done to properly adjust these various masses of borrowed skin and connective tissue and more will be required. The result, however, justifies the time and annoyance to the patient of so many operations. She is now one of my most grateful patients.

In all such nasal reconstructions, the patient should know at the start that six months or a year is not too long a time to devote to the operative relief. Each step must be followed by a period of inactivity to allow cicatricial influences to show their effects. The surgeon must be guided by the experience obtained in each patient, and can not promise exactly when he will operate again or what he will do as the next step.

Fig. 4.—Loss of end of nose from caustic applied by quack doctor. [Case shown to illustrate what can be done in similar cases due to syphilis.]

Some years ago I satisfactorily slipped a triangular flap down from the forehead; and pinched it up into a fair-looking dorsum with an eyeglass spring attached to a pair of spectacles supported by the ears.

Another method which might be employed is that used by Keegan in rhinoplasty for amputated nose. He dissects the tissue from over the nasal bones and

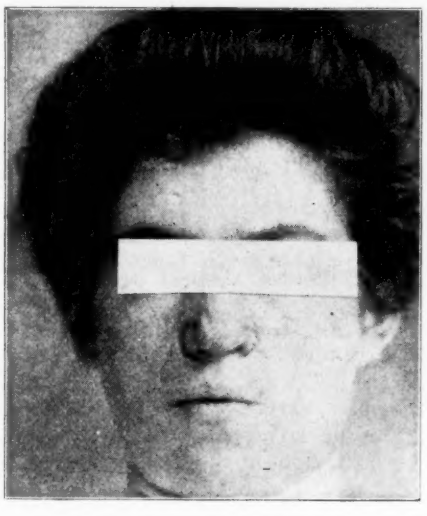

Fig. 5.—Loss of end of nose repaired by flaps from cheeks. [Same case as Fig. 4.]

turns it downward in two flaps, which then lie with their raw surfaces upward. Over these might be placed two flaps made from the cheeks or a frontal flap similar to, but smaller than, that used in making an entire cartilaginous nose. Other suggestions are to bring down a frontal flap after making a groove down the middle of the upper part of the nasal bridge, by splitting the soft tissues in the middle line and drawing them aside; to make a small frontal or frontonasal flap, perhaps containing periosteum or a thin layer of bone, and thrusting it downward through a transverse button-hole or tunnel made in the tissues covering the lower end of the nasal bones; to detach one of the nasal bones and displace it downward; to chisel loose the nasal bones and pry them forward; to cut the edge of the superior maxillary bone with a chisel and bend it forward.

If there is an opening in the hard palate, an obturator must be made to close it. In this event it might be possible to attach a long lever to the nasal surface of the artificial palate and let it hold up the flaccid new part of the nose. The end of this lever might be provided with a narrow pad to act as a sort of ridge-pole to the nasal roof; and the lever might be provided with a spring joint like that controlling the blade of a pocket knife. The patient could then adjust the obturator in the mouth and push the lever and its pad into position by a probe or hook introduced through the nostril.

Sunken noses not requiring such extensive operative treatment might perhaps be improved by two cheek-flaps turned up and thrust through subcutaneous tunnels extending from the sides of the nose to the middle line. This maneuver would fill up a slight hollow on the dorsum of the nose. It might be utilized also in congenital saddle-back nose, which has a hollow in the dorsum of the organ.

Syphilitic noses in which much tissue has been lost must be treated by rhinoplastic operations, which will bring a sufficient bulk of tissue to give opportunity for modelling. The new tissue may be taken from the forehead, the cheeks, the arm, or the palm of the hand. A large flap from the abdomen or thigh may be attached to a raw surface made on the hand; and afterward be transferred to the face.

After a crude resemblance of the nose has been thus made, minor operations will shape it so as to improve the outline and fashion alæ and columella. The ala may be lined to prevent cicatricial occlusion, by a strip of mucous membrane cut from the inside of the upper lip, and thrust through a button-hole made in the upper part of the lip.

The incisions made in the plastic restorations of syphilitic noses may be free, and usually must be so; but the scars become in time scarcely perceptible. Even if they are evident to close observers, they are much less disfiguring than the lesion for relief of which they were demanded.

Many persons, both in and out of medical circles, believe that syphilitic nasal deformity is incurable. This is an error and should be combatted by practitioners everywhere. Aseptic methods, carefully planned and well-executed operations, and judicious after-treatment hold out the same hope of benefit as in other departments of surgery. The degree of benefit varies only with the complicated character of the problem. Many patients may be very satisfactorily relieved of the greater part of the unsightly deformity; and there are very few who can not have their condition considerably ameliorated. It is sad to meet in one's daily walks so many deformed noses that could readily be improved.

1627 Walnut St.

Benefit Profits.—The *Muenchener Med. Woch.* devotes part of its profits every year to various benevolent organizations for members of the profession in Bavaria. Last year it distributed 4000 marks between the fund for widows and orphans of physicians and three other societies, with 200 marks to the building fund of the local medical society and 200 marks for a memorial to the late Dr. Aub.

THE MEDICAL TREATMENT OF PEPTIC ULCER.*

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The personal experience of any malady is apt to enhance the interest of a physician therein, and should not detract from his knowledge thereof. Thus I have been led to analyze my hospital and private records of cases of peptic ulcer, which, for perhaps fifteen years, I have treated more rigidly than do most physicians.

For diagnostic purposes, cases of peptic ulcer may be divided into three classes: 1. Those which are entirely latent and present either no symptoms at any time or first manifest themselves by hemorrhage or perforation. 2. Those with symptoms of indigestion not easily distinguishable from those of indigestion arising from other cause. 3. Those with diagnostic symptoms. The first class is not of therapeutic importance unless hemorrhage or perforation occurs, throwing them into Class 3. Careful study of the case in all its aspects may in like manner transfer a case from the second to the third class, that to which alone my remarks to-day are applicable—the class in which the diagnosis is reasonably certain.

The salient fact with special therapeutic bearing seems to me the presence of an open ulcer associated with and probably in a measure dependent on hyperacidity. The gastric ulcer is subject to two adverse influences—the irritating acid secretion and the unrest due to the periodical changes in the size of the organ and to the peristalsis. The duodenal ulcer is subject only to the former. In spite of these adverse influences, we know that healing may take place; but it would seem entirely reasonable to suppose that healing may be promoted by rest just as it is in every ulcer of the skin or mucous membrane which is accessible to vision. We have no means of knowing, in any given case, how large or deep an ulcer may be, or whether it is single or multiple. We know that surface ulcers of any depth or size do not heal in two or three days, and if the principle of absolute rest is worth being enforced at all in peptic ulcer, it is worth strict enforcement. Hence, I long ago adopted the arbitrary period of two weeks as a reasonable time to allow for the healing process and a fair average limit of toleration of exclusive rectal feeding. This period has been prolonged in two cases to five weeks, and has been shortened in others to meet the seeming demands of the special case. In a few cases rectal feeding has clearly provoked stomach unrest and vomiting. In some others the period of stomach abstinence has been shortened on account of the refusal of the bowel to retain or absorb in spite of varied coaxings. In most cases all discomfort ceases as soon as the stomach ceases to work, and there is usually no great sense of hunger. If discomfort persists or hunger is importunate, I give small doses—1/32 to 1/16 grain—of morphia once or more during the day. Incidentally I may allude to the happy effect of morphia in checking gastric hypersecretion. To fully realize this one must have himself experienced it.

I ordinarily give a large cleansing enema daily and nutrient enemata every six hours. Formerly I rarely gave more than six ounces of milk, or milk and egg—in either case with a pinch of salt—at a time. Lately, acting on the suggestion of Dr. G. G. Sears, I have found that in some cases as much as a pint of nourishment can be introduced and absorbed every six hours. For thirst I sometimes allow small quantities of water by the mouth. In other cases I have introduced water into the rectum or under the skin.

My two weeks' starvation treatment of cases of undoubted peptic ulcer was founded on *a priori* reasoning, which must always be checked and dominated by results of actual experience. The able and exhaustive analysis of Greenough[1] and Joslin, of 187 cases of gastric ulcer treated in the wards of the Massachusetts General Hospital from 1888 to 1898, throws important light on peptic ulcer in its various aspects. The subsequent history of 114 of these cases was ascertained. It appears that a larger percentage of cures was obtained in those fed by the mouth than with exclusive rectal feeding. This does not prove that the latter method was harmful, inasmuch as the rectum-fed cases comprised a larger proportion of severe ones, but it seems to show that there is no such advantage in absolute gastric rest as the considerations which led me to adopt it suggested as possible. One important suggestion, however, appears to result from the analysis of my personal cases, made with great care by Dr. W. H. Smith, to whom I wish to express obligation. Of 85 cases Dr. Smith succeeded in getting reports to date in 52. Of 63 cases treated by rectal feeding, the end result is known in 37. Of these 37, 18 were fed exclusively by the rectum less than ten days, and in 7 there has been a recurrence of severe symptoms. Of the 19 cases fed exclusively by the rectum for more than ten days, there has been recurrence in only one. Greenough's and Joslin's results nearly brought me to the point of abandoning my strict treatment. If careful stomach feeding is as safe, it is certainly quicker and pleasanter. But the marked contrast in frequency of recurrence, brought out by Dr. Smith in cases of more or less than ten days of absolute rest, encourages me to persevere until larger figures are at my disposal. As far as present figures go, they are strongly in favor of prolonged rest and are consistent with *a priori* reasoning.

* Read by title in the Section of Materia Medica, Pharmacy and Therapeutics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

1. Am. Jour. of the Med. Sci., August, 1899; JOURNAL A. M. A., xxxiii, № 6, p. 534.

LAVAGE OF THE STOMACH AS A THERAPEUTIC AGENT IN THE TREATMENT OF HABITUAL CONSTIPATION. A PRELIMINARY REPORT.*

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The application of remedial measures to one healthy organ for the relief of diseased conditions in another organ has been practiced from times immemorial. Counterirritation is probably the prototype of all such procedures. Dr. Fenton B. Turck, Chicago, has recently reported the results of his experiments in the treatment of diseases of the intra-abdominal viscera through the colon. The washing of the bowel for the relief of various acute disturbances of the stomach and other organs is a measure used not alone by physicians, but by almost every mother all over the world.

Does the washing of the stomach have any influence upon the relief of intestinal disturbances? The answer

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is in the affirmative. Lavage of the stomach is indicated as a therapeutic measure in the following intestinal disorders: 1. Constipation due to excessive acidity of the stomach. 2. Constipation due to gastric atony. 3. Diarrhea resulting from excessive production of mucus in the stomach. 4. Obstruction of the intestines from whatever cause: "By lavage we relieve the upper portion of the bowel from the pressure and weight exerted by the contents of the stomach and, having relieved the pressure, the part of the bowel which lies above the constricted portion empties its contents into the stomach and thus lessens still more the general tension."[1] 5. Habitual constipation. The first four indications are self-evident and do not require any extended commentary. The fifth indication, habitual constipation, of which I claim to be the originator, until some one will claim priority,[2] requires a few words of explanation. I have "stumbled" upon this discovery. I have noticed in a number of patients who suffered from some gastric trouble accompanied with constipation that, after I had used lavage on them, they reported the following day that they had a natural movement of the bowels, "the first in many years." With the increase of the number of such cases it dawned upon me that there might be some relation between the washing of the stomach and the movement of the bowels. Instead, therefore, of only removing the stomach contents on the second day of the examination, I made it a rule to also wash the stomach in all cases of constipation. The results were surprising. Later, I applied this measure to the treatment of habitual constipation in patients who were free from any gastric disturbances. In a large percentage of such cases the results were highly gratifying.

I am at present studying the physiologic basis of this treatment, and will reserve the report of my conclusions for a future occasion. As a preliminary communication I wish to call the attention of the profession to the following statements: 1. A certain percentage of individuals suffering from habitual constipation are apt to have a spontaneous movement of the bowels the following day after the stomach has been washed for the first time. 2. The majority of such patients will eventually recover the normal function of their bowels, if lavage is continued daily for two or three weeks, and later at greater intervals. 3. The best results are obtained from using cold water, or hot and cold water alternately. 4. The best time for such lavage is one hour before breakfast.

1. Spivak: Med. Treatment of Intestinal Obstruction. JOURNAL A. M. A., May 27, 1899.

2. Since this paper has been presented, there appeared an article by Oswald Ziemssen, entitled "The Stomach-Tube as a Peristaltic" (Berliner Klin. Woch., Aug. 13, 1900), in which the author claims that the daily use of the stomach-tube with lavage is a valuable stimulant to peristalsis, and an efficient means for curing chronic constipation. I am glad that the number of observers has doubled. Notwithstanding the fact that Dr. Ziemssen's article was printed first, yet, since my article was presented in June, 1900, I still claim priority.

Extraordinary Fecundity.—According to the *Medical Age* of March 25, one of the Italian journals has recently recorded an extraordinary case of fecundity of which it guarantees the authenticity. Flavia Granata, who it appears is well known at Rome, has recently given birth to her sixty-second child. This woman is now 59 years old. She was married at 28, and has successively given birth to a daughter, then six sons, then five sons, then four daughters, and then a long series of twins annually, and ended recently by having four sons.

WHAT DRUG STANDARDIZATION MEANS FOR THE PHYSICIAN.*

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In the early decades of this century medicines were very simple, and of the many herbs, roots and barks that were used, few if any had their virtue attributed to any definite chemical that they contained. As early, however, as 1805, Stürner, a German pharmacist, isolated morphin from opium and termed it *sel essentiale opii.* The result of this epoch-making discovery was not to establish drug assaying, as would appear likely, but instead a great interest in the isolation of the alkaloids from drugs and the chemical study of these alkaloids. The leading pharmacists of the day were developing as chemists, and looked upon the problem of alkaloids from the chemical standpoint almost entirely. The problem was to isolate the alkaloid, determine its composition and, if possible, its constitution. Although medical men used the resulting alkaloids in their profession, it did not occur to any of the pharmacists of the time to standardize the drug by determining the amount of alkaloid it contained. Among the great physicians of the early decades of this century there was one, however, who was in advance of his time in this connection, and that was Claude Bernard who, when the *sel essentiale opii* was promulgated as a *fait accompli,* was sufficiently impressed as to its importance to announce that, inasmuch as it appeared that this morphin was the essence or active principle of opium, he predicted that the time would come when, by establishing the amount of these principles in drugs, physicians would be enabled to have at their command drugs whose strength of active principle would be known, and that it would be possible to accurately control the dosage and hence the medicinal effect of most if not all drugs. This was seventy-five years ago. So slow has been the development of this idea of Claude Bernard's, however, that, although alkaloids were known by the dozen during his lifetime, but three drugs in the U. S. Pharmacopeia of 1890 have an established standard of akaloidal strength, viz.: opium, nux vomica and cinchona.

The cause of this anomalous condition of affairs is to be found in the fact that while pharmacy has during these years developed more as a trade than a science, chemistry entered, decades upon decades ago, the portals of the university and gained upon pharmacy enormously. Chemistry has taken hold of these alkaloids and not only given us their composition, but in almost all cases their atomical anatomy, i. e., their constitution. During all this time pharmacy has labored on, not as a science to any extent, but in colleges of pharmacy as a trade, the object being to turn out as many men as possible who could put up a prescription and pass a state board of pharmacy examination. I venture to assert that had the university opened its portals to pharmacy as it has to chemistry, notably in this country, the great majority of drugs would to-day be possessed of a standard of strength and their chemistry would be generally known.

But few of the many pharmacists who are graduated annually have any time or any desire to spend any time investigating drugs, and as a result the work that is necessary to enlighten us on the chemistry of the potent

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drugs is not forthcoming. The great trouble has also been that, so great has been the number of knights of the pestle set adrift in this country, with sheepskin in hand and no fixed position in life established, there has been undue competition in the profession of pharmacy, and instead of being able to devote any time to investigation, even if the inclination were present, the entire time of the pharmacist is taken up in devising schemes to get the better of his numerous competitors.

To turn now to the subject proper of this paper, let us consider what the standardization of drugs means for the physician. To-day physicians, in case of the majority of drugs, have no idea of the potency of the ones they are prescribing, and they must, as they do, rely on the good name and intentions of the manufacturer and the dispensing pharmacist. In case of opium, nux vomica and cinchona, they know that when they prescribe preparations of these drugs they can depend on getting the effects of a definite and invariable quantity respectively of morphin, strychnin and quinin. As soon, however, as they touch upon such potent drugs as digitalis, belladonna, henbane, aconite, ergot, cascara sagrada, rhubarb, senna or golden seal, they must take the word for the deed and assume that they are getting a preparation of sufficient strength to produce the desired effect. All that they are justified in assuming is that they are getting the effect of a fair, sound, average sample of the drug, but just how the same will measure up as compared with what they have used for another patient who got it at another pharmacy, they have but little means of knowing.

Let us take for instance digitalis. This is a drug that is almost universally used by physicians, and is also used in emergency cases, when the heart is involved, and prompt and decided therapeutic effect is counted on.

Then consider ergot. We all know how greatly these drugs vary in therapeutic potency and in content of active principle. The pharmacist has no official standard for either, and must use his eye and nose to decide whether the drug he is purchasing is, in his judgment, prime or not. Appearance is, however, no criterion whatever of drug potency, for many and many a time have I assayed beautiful, bright and bold digitalis leaves or ergot grains and found, to my surprise, that they contained far less active principle than did another lot of drug I had before me that was anything but prepossessing in appearance. From the bold, bright drug, an infusion would be made, or a tincture, by the pharmacist, and the therapeutic effect of only 0.15 per cent. digitoxin and 0.12 per cent. digitalin would be produced, while from the unsightly specimen aforesaid the therapeutic effect of 0.38 per cent. digitoxin and 0.25 digitalin would be obtained, i. e., the dull digitalis would produce twice the effect of the beautiful, bright sample, on the heart of the patient. The same may be said of ergot, where, if possible, more trustworthiness and uniformity are desirable, due to the greater emergency nature of the drug than in case of digitalis. One lot of ergot is by no means necessarily equal in content of active principle, and consequently in therapeutic effect, to another, and any fluid extract used in filling physicians' prescriptions in one pharmacy may be as widely different from that obtained in the nearest adjoining pharmacy as 0.05 per cent. differs from 0.35 per cent.

The great disadvantage to the physician lies in the fact that, except in case of opium, nux vomica and cinchona, he has absolutely no assurance that when he prescribes any preparation of a vegetable drug he will get any trustworthy therapeutic effect from it. In fact, he may expect almost any effect, from none at all to the effect of an overdose; for actual experience in assaying vegetable drugs has shown me that some lots of drugs contain unusually large amounts of active principles, in fact sufficient to make a large normal dose a poisonous one. The mere fact that the actual alkaloidal strength of most galenical preparations of the U. S. P., as they are standing to-day on the shelves of the thousands of pharmacies of this country, is sure to vary within wide limits, and does naturally so vary, ought to cause every physician, who knows what assaying a drug and having a fixed active principle strength for all drugs is, to be very emphatic in insisting that the U. S. Pharmacopeia should set up definite standards for all vegetable drugs that have any therapeutic value at all. As the case now rests, the therapeutics of the vegetable drugs to-day is nothing more than the casting of a die or the flipping of a penny. "Heads," I get a therapeutic effect to speak of; "tails," I get practically no therapeutic effect.

Many manufacturing pharmacists and chemists of this country have set up standards of alkaloidal strength for many of the vegetable drugs, and their preparations of these same drugs may be relied on to produce at least uniform results themselves. They reach a conclusion as to a drug standard of alkaloidal strength, by assaying many typical samples of the drug and using the mean of these assays as a standard, embracing in these figures also the published assays of as many other pharmaceutical chemists of note as they can. While this is better than no standard, inasmuch as all the fluid extracts or tinctures made by that one firm will always be uniform, yet it is far from being what is desirable and necessary. What is wanted is to have a national alkaloidal standard for the drug, and then have all manufacturers and retailers have their preparations of this strength. Then the physician may depend on geting uniform and satisfactory results. It is manifestly impossible for the Revision Committee to establish standards for all vegetable drugs at once, but if they feel that the desire of the medical profession throughout the land is to have standards established, they will see that for all drugs that can be standardized to-day standards will be established in the next edition of the pharmacopeia.

To be specific and no longer deal in generalities, what is meant by a therapeutic standard for a drug, and how can the same be determined? A therapeutic standard of a drug or the preparation of a drug is, in the first place, the adoption of a definite content of that drug in a certain active principle or principles which are known to have the same therapeutic effect as the drug, as for instance 5 per cent. of total alkaloids and 2.8 per cent. quinin for cinchona bark; 13 to 15 per cent crystallized morphin for powdered opium; 1.5 per cent. total alkaloids for fluid extract of nux vomica; 15 per cent. total alkaloids for extract of nux vomica, etc. In these cases all the fluid extract of nux vomica on the shelves of the pharmacists of this country, that is labelled U. S. P., contains 1.5 per cent total alkaloids, andl all the fluid extracts of cinchona contains 5 per cent. total alkaloids and 2.5 per cent. quinin, etc., and whether a physician's prescription is put up in Atlantic City, N. J., or in San Francisco, the therapeutic effect of these two drugs will be identical. For these three drugs the physician can rest assured that he will get

identical results, practically, wherever his prescriptions calling for these are compounded.

How much more scientific for therapeutics and how much more satisfactory for physicians especially, and for pharmacist and patient as well, would it be if this could be said of all drugs? The chances of a patient complaining that the medicine did not work, or of the physician failing to get prompt results where prompt ones are necessary, due to full therapeutic strength of his medicines, would be reduced to *nil*. This is just exactly what drug standardization means for the physician.

To return to our specific cases, ipecac, golden seal, wild cherry, cascara sagrada, rhubarb, sanguinaria, ergot, digitalis, conium, belladonna, henbane, cannabis indica, aconite, etc., should be similarly standardized so that physicians can be positive that when they prescribe these and put U. S. P. behind them they will always get preparations, from all pharmacies, of identical therapeutic strengths. The exact standard in these drugs is arrived at by determining, from an examination of many samples of sound, prime drug, what the average content of the same in active principle is. If a drug of this active principle strength can be prescribed with safety in the doses given in standard works on therapeutics, and produce all the desired effects of the drug, it can and should be adopted as the therapeutic standard of that drug. Thus, in case of ipecac, 1.75 per cent. of total alkaloids; of golden seal, 2 per cent. hydrastin; of sanguinaria, 1 per cent. sanguinarin; of conium, 0.6 per cent. coniin; of belladonna root, 0.45 per cent. total alkaloids; of colchicum root, 0.5 per cent. colchicin; of aconite root, 0.5 per cent. aconitin, etc., might be accepted as the therapeutic standards of these respective drugs, because experience in assaying typical specimens of them has shown that this is the average content of the specimens that, when dispensed in the usual doses for drugs, will produce the full therapeutic effect thereof. There are some drugs of which the chemistry is not sufficiently advanced to justify us in stating that the therapeutic effect thereof is due to any one or two definite chemical substances, as, for instance, cannabis indica, cotton-root bark, culver's root, burdock root, lobelia, poke root, yellow dock root, squill, senna, senega, stillingia, etc., but it is only a question of time when these drugs will have their chemistry and pharmacology worked up, and we will then know to what constitutent or constituents each owes its therapeutic activity.

I would not have you think that this subject is incomplete and unworthy of the attention and confidence of the medical profession until all drugs shall be perfectly known and standardized. The principle I am arguing for is as good, sound and correct if only one drug is standardized as if all were standardized. Naturally, we can not standardize them all at once, or in five or perhaps ten years, but we can hope that we have the encouragement and cooperation of the medical profession in endeavoring to standardize them as rapidly as lies in our power. Especially would I have it clearly stated that, as nothing can be lost to the physician, and immeasurably much gained by the adoption of drug standardization, the members of the medical profession should lend the cause of scientific pharmacy and medicine the great impetus of their favor and encouragement by making it apparent that they favor drug standardization, and are convinced of its advantages to them and to medicine. The convention of pharmacists and physicians that recently met at Washington to appoint a committee and give the latter instructions as to the revision of the pharmacopeia, was quite decided in its favor of the more general standardization of the vegetable drugs of the pharmacopeia. It appeared to be the unanimous sentiment of the 188 or more delegates from institutions of pharmacy and medicine there assembled, that as many as possible of these vegetable drugs should be standardized, and the committee there elected will no doubt regard the subject of drug standardization as its most important duty. The view of the American Medical Association, as expressed by one of its representatives, that physicians would like to have the pharmacopeia contain a liquid and a solid preparation of each vegetable drug in it, and have these respectively in each case represent a like amount of the drug, was not favorably considered by the convention. The idea was to have all the fluid preparations represent, say 100 cubic centimeters 100 grams, i. e., a fluid extract, and then have no tinctures or more dilute preparations of the same drug. Similarly for solid preparations, have all solid extracts represent a uniform amount of the drug, say 100 grams represent 500 grams of the drug, and then have no stronger or weaker solid extracts of the same drug. The objection raised was that it was impracticable, as many drugs can not be made into liquid or solid preparations of the same strength as other drugs can be. This, however, has no bearing on drug standardization, as the latter depends on quantity of active principle, and the former depends on quantity of drug, which necessarily brings with it variation of quantity of active principle.

To sum up, drug standardization means that drugs shall always be uniform in therapeutic strength, and the great advantage of this uniformity to the physician is that he can always depend on obtaining definite and uniform therapeutic effects whenever he prescribes a standardized drug. It removes the element of doubt from the physician's mind, and places him on a sure footing in relation to his patients, while at the same time avoiding for the pharmacist any question as to the reliability of his drugs, and assuring the patient that he is always getting what the physician desired that he should get. Any achievement that thus makes for the advancement and improvement of all the parties in the highly important operation of administering to the ills of humanity must needs be a good achievement, and deserving of the approbation and encouragement of all concerned.

"Christian Scientists" Not Insurable.—In the March issue of the *Cleveland Journal of Medicine*, attention is called to the fact that the fraternal beneficial organization known as the Knights of Honor some months ago ruled that persons believing in the doctrines of so-called "Christion Science" would not thereafter be received into membership. "This action was taken because it was seen to be reasonable not to take any risks upon the lives of persons who refuse to avail themselves of the accumulated knowledge of medical science when they are ill. It is now learned that one of the greatest and most conservative life insurance companies in the world, the Mutual Life Insurance Company of New York, without making any parade of the matter refuses to issue policies upon the lives of 'Christian Scientists.' These facts are not noted to give these organizations credit for doing that which common sense and good business policy suggest, but to show the very fact that, viewed from the commercial standpoint, the 'Christian Scientist' and faith curist are recognized as persons who do not take average care of their lives. For insurance purposes they are being classed along with habitual drinkers and with those who follow hazardous occupations."

A VISIT TO "JESUS HILFE" OR THE LEPROUS HOSPITAL OF JERUSALEM.

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During a recent visit to Palestine it was my pleasure to inquire into the condition of the lepers of that country and pay a visit to the "Jesus Hilfe" Asylum. Through the courtesy of our American consul, I was most cordially received by the superintendent and physician in charge, Dr. Einsler, and conducted through the institution. Every available opportunity was given me to study the disease with a view of bringing home to the profession of Minnesota, where the affection at present exists, some information as to its prevalence in the Orient, where from time immemorial, so to speak, it has had its home.

Notwithstanding the fact that "Jesus Hilfe" Hospital is one of the best equipped of its kind in the world, and is an imposing stone building surrounded by luxuriantly blooming gardens, the average tourist is content to view it from a distance. In fact, it is somewhat difficult to secure the services of a dragoman who is willing to cross its threshold. The hospital is situated in the German settlement of Jerusalem, on the hillside, in full view from the main road leading to Bethlehem, probably a half hour's drive from Jerusalem, and commands a fine view of the surrounding country.

Fig. 1.—Jesus Hilfe Hospital.

The history of its origin and growth breathes the true missionary spirit, a brief account of which may be interesting.

ORIGIN AND GROWTH OF THE HOSPITAL.

In the year 1865, a Pomeranian baroness, von Keppenbrück, visited Palestine, and being deeply impressed with the wretchedness and misery of the lepers, made a liberal contribution toward the founding of an asylum for them. Working in conjunction with the order of the Evangelical Brotherhood, additional funds were obtained in England. A committee was appointed and a building erected near the Jaffa Gate, where lepers who came of their own volition were admitted. Years later, however, it was found that the building was inadequate to accommodate all who applied for admission, therefore plans were effected to erect the present hospital. Voluntary contributions were received from Germany, England, Switzerland and North America. In 1887 it was completed, and the inmates were transferred to the new building. A few years prior to this, however, the founder of this magnificent charity placed it under the management of the Brotherhood, and it has since become their absolute property.

MANAGEMENT OF THE HOSPITAL.

The Chapter House of the Brotherhood, under whose control the hospital is, is in the Kingdom of Saxony. They appoint the house parents and four deaconnesses who are trained nurses, and publish annually a statement of the disposition of the moneys received. A local committee composed of members of the German Lutheran congregation of Jerusalem has the immediate supervision of the institution. Most gratifying results have been obtained.

THE HOSPITAL INMATES.

Fifty patients can be accommodated and the hospital is sometimes taxed to its utmost capacity. On account of local prejudices, when a shelter was first provided, it was difficult to induce lepers to enter the hospital, but before the old building was abandoned twenty patients were enrolled. Unfortunately these poor creatures can only be carefully nursed and made comfortable until death ends their misery, as a cure for this loathsome disease remains still undiscovered.

Those who become inmates have their sores bandaged daily, are frequently bathed, furnished with comfortable clothing, fresh linen and nourishing food, besides being provided with space in the ward, in which are a bed, an easy chair and combination table and cupboard. They are not compelled to remain in the hospital for any given time, but as a rule they soon appreciate their improved environment and become attached to those who care for them and contribute to their comfort. They are not permitted to leave the grounds, beg or marry; neither are married lepers admitted. Through the house father they keep in touch with their friends, and at certain times are permitted to receive them. On pleasant days they sit about in the garden or on the roadside outside the entrance gate, amusing themselves playing draughts or other games.

Those having use of their hands and feet assist in the work about the grounds. Reading is a favorite pastime, and being read aloud to is considered a privilege. Mental obtuseness is not of necessity present to the extent that was formerly supposed. They are said to evince a keen interest in any occurrence out of the ordinary routine of every day life in the hospital, such as the return of an attendant after a vacation, and gladly contribute their best to the "welcome home," dancing the fantasia, etc., and for days talking of nothing but the coming event.

LEPROSY IN PALESTINE.

The number of lepers in Palestine is about four hundred, the village of Siloam, southeast of Jerusalem, alone having between thirty and forty. The government designates places for them in which to live, as they are excluded from social and family life. Institutions under Mohammedan jurisdiction accord them full liberty to wander about at will. They sit along the wayside singly or in groups, asking alms. The roads frequented by tourists are their favorite resorts, a large proportion of the Siloam contingency congregating at the foot of the hill leading to the Garden of Gethsemane and the Mount of Olives. Several of the accompanying photographs were taken from these groups. Since 1893 a residence has been set apart for children, the offspring of lepers, in which are a half dozen or more healthy boys and girls. It is hoped that in this way such offspring can be protected against the development and ravages of the disease by good care, proper training and nourishing food. The majority of lepers manage to eke out an existence by begging, and prefer their

Fig. 2.—Deaconesses.

independence and alms to a residence in an asylum. The fact that their condition is aggravated by this mode of life, neglect and filth is self-evident, and beyond the appreciation of the average Oriental, who is content to habitually sleep on a heap of rags or a bundle of straw with perhaps nothing but a stone for a pillow and is oftener without than with a covering, shedding his garments only when in tatters. A beggar society was some years ago founded in Jerusalem among the lepers, with a president at its head, called a "sheik." Every leper who desires to become a member must pay an initiation fee with the promise to beg and contribute a certain portion of his income obtained in this way to the general fund of the society. Individuals who have no money or are too ill to beg are not accepted.

LEPROSY INVESTIGATIONS.

Dr. Einsler, the physician in charge of the hospital, is a Hungarian by birth, and about fifty years of age. For a period of sixteen years he has been identified with the asylum and is enthusiastically in love with his work. He is a keen observer and fully abreast of the times, devoting himself unceasingly to his laboratory, and prosecuting researches with a view to throw more light on the mooted questions of leprosy. It was my pleasure and privilege to have several personal interviews with Dr. Einsler regarding his long experience with the disease. He spoke of the mental and physical characteristics of lepers, and especially dwelt on the clinical aspects of the disease as it presents itself in Palestine. He holds the view that as yet it is not definitely known how leprosy is propagated, whether through heredity, contagion or infection, but he excludes contagion for the reason that no case has ever come under his observation that would lead him to believe in the theory, basing his opinion at the same time on the fact that people constantly mingle with lepers. Then, too, lepers always have been and are still allowed to wander through the streets or along the highway, transacting business, handling money, fruit, etc. He believes a peculiar susceptibility or predisposition exists primarily, and that heredity or infection plays its part afterward. And still, on this point he is not satisfied, because as yet the facts in his possession are not fully established, but he hopes that as bacteriologic investigations progress something more definite will eventually be ascertained. The lepra bacillus has been discovered and is now generally recognized as a special micro-organism giving rise to the malady.

I am able to show under the microscope a preparation quite characteristically demonstrating this bacillus, which was mounted in the "Jesus Hilfe" Hospital, the specimen having been taken from a pustular nodule on the face of a patient. Dr. Einsler believes that as soon as cultures are made and inoculations performed our information on the manner of communication will be more definite and the question will become settled. In his laboratory scientific investigations along this line are being made, and before long, he thinks, he will be able to publish tangible conclusions on the subject. In speaking of the usual early manifestations of leprosy, he said that the upper respiratory tract—the mucous membrane of the nose and throat—becomes affected. The turbinated bodies, the cartilages of the nose, the soft palate and the larynx are attacked. It is with considerable interest that I note this observation, because it concerns us who are specially engaged in the treatment of the diseases of the nose and throat.

The forms of leprosy as observed in Palestine are the nodular, nervous, and the mixed.

CLINICAL FEATURES.

The skin and the respiratory mucous membrane become affected. The face, the hands, the forearms, the ankles and the feet not unfrequently evidence the onset of the disorder. The skin is at first dry and glossy, while later appear small lumps or nodules, either in great or small numbers, which increase but little in size and often remain unchanged for years. This condition is called the small nodular variety of leprosy. Then again only a few nodules appear, about the size of a hazlenut. Frequently in this form there is present an intensely red discoloration or inflammation of the skin, resembling erysipelas or inflammation of the lymph vessels. Sometimes this condition is

accompanied by a marked elevation of the body temperature, which continues for several days and is followed by an increase of the number of nodules. The discoloration of the skin does not limit itself to the nodules, but also involves the surrounding integument. It is not unusual for the nodules to degenerate when fever is present, which condition may be accompanied by a diffuse swelling and infiltration of the neighboring tissues.

The broken-down nodules generally heal and cicatrize, but, on the other hand, they may become associated in the necrotic process with others lying in the same region, in this way forming extensive suppurative areas which show no disposition to heal, thus eventually exhausting the vitality of the patient and causing death. It not seldom occurs that the nodular forms of the disease are both present in the same individual; so apparent is this that no trouble is experienced in determining their co-existence. Palpation is invaluable, because not infrequently the sense of touch is the only means by which to determine the presence of the small nodules, while the large ones are visible. There are instances where no nodules exist and nothing is to be seen but circumscribed thickenings of the skin, giving the characteristic appearance of leprous spots. Sometimes, owing to the existence of these circumscribed areas, the sweat glands perish and lose their function, thus giving rise to dryness of the skin. Those parts of the body covered with hair undergo a similar change, the hair bulbs degenerate, followed by dryness, brittleness and dropping out of the hair, eventually leaving behind a smooth, shiny surface. Examples were cited where the eyebrows or even the beard had thus suffered. At no time has it been observed that the hair covering a leprous skin has turned white.

Somewhat in a similar manner as that of the skin, the mucous membrane of the mouth, nose and eyes suffers. Nodules appearing on mucous surfaces are generally paler in color than the tissue adjacent to them. Mucous membrane nodules degenerate more easily than those appearing on the skin, a circumstance which is not quite understood. The fact perhaps is due to the nature of the irritant and the susceptibility of the membrane. Probably the character of the local irritant makes the difference. Yet it can not be disputed that the same morbid process is at work in the mucous membrane as in the skin.

Circumscribed swellings or thickenings are also characteristic of the mucous membrane. When these areas of acute swellings join similarly affected nodules lying in the same region, extension of the morbid process takes place and considerable destruction of tissue results. In grave cases the cartilages of the nose and the soft palate are destroyed. Extensive destruction of the palate usually forms a direct communication between the mouth and nose. The mucous lining of the posterior nares, nasopharynx and larynx may also be invaded by the bacillus of leprosy. When the larynx is affected, hoarseness and sometimes complete loss of voice are produced.

The tongue is not exempt. Frequently nodules appear in great numbers, whereby the tongue becomes thickened, uneven or fissured. In certain instances the gums swell and bleed as in scurvy. The teeth loosen, drop out or are easily removed. The eyes not infrequently become involved. The nodules appear on the upper surface or on the edges of the lids. Movement of the lids is interfered with and the fissure between the lids becomes contracted. Nodules seldom appear on the mucous membrane of the lids, while the mucous membrane of the orbit is frequently affected. The cornea is rarely involved. Generally the conjunctivæ are dry and brilliantly white. By and by there takes place a diminution of the luster of the sclerotic coat, which is gradually and surely followed by total blindness. Small nodules form at the edges of the sclerotic coat, forming, as it were, flaps of the mucous membrane.

The disease is not limited to the skin and mucous membrane; the lymph glands may become involved. The glands of the neck swell and inflame. Sometimes glandular suppuration takes place and gives origin to a continued discharge of pus.

Regarding the first stage of the nervous form of leprosy not much is known, because the individual seldom comes under the observation of the physician until long after the nervous system has shown signs of disturbance. It is only after the nervous affection has advanced that attention is drawn to it. The beginning period of the nervous form is characterized by spots appearing on the skin, accompanied by fever. Violent pains of the extremities, resembling more or less those of rheumatism, is a frequent symptom.

Fig. 3.—Lepra Leontiasis.

Extreme sensitiveness of the skin exists. The advanced stage of the nervous form is not marked by a change of the surface of the skin, except that now and then increased pigmentation is apparent and sensation is usually decreased. As the nervous affection progresses, sensitiveness diminishes, especially in the face and the extremities, which condition increases until entire loss of sensation is experienced or anesthesia of the parts is established. But even when anesthesia of the skin is present, the deeper structures are still sensitive to pain. In some cases the peripheral nerves assume spindle-formed thickenings. Amputations some-

times are rendered possible in consequence of the anesthesia and a general anesthetic is not needed. The incision of the skin is unaccompanied by pain, but on the other hand, separation of the deeper layers of tissue is attended by violent pain.

Fig. 4.—Anesthetic Facial Leprosy.

The muscles undergo certain changes. Their tendency is to grow smaller in circumference, but they do not disappear. It is apparent, not true atrophy. The muscles of the face, the hands and the feet undergo

Fig. 5.—Lepra Leontiasis.

the atrophic process. The face assumes a peculiar, staring countenance, expression being entirely lost. The eyes can not always be closed, or only partially so, in consequence of which, through mechanical influences, serious trouble may arise, often inducing complete blindness. The muscles of the palms of the hands and of the soles of the feet do not atrophy.

Motility of the fingers and toes diminishes. Owing to the predominating strength of the contracting muscles, the fingers and toes contract or become clutched.

Fig. 6.—A so-called Healed Leper. Natural Process.

In the course of the disease the joints become affected and the loss of a finger or a hand follows. An illustration of this is seen in the photographs. The cause of the natural amputation, as it were, is explained as follows: Channel-like swellings form in the neighborhood of the

Fig. 7.—Early Stage of Leprosy of the Face.

joint, which begin externally and gradually extend deeper and deeper until the joint is destroyed and the member drops off, healing and cicatrization ensuing. This method of exfoliation is peculiar to the fingers and toes. Then again, inflammation of the joint, attended

by violent pains and fever, followed by suppuration and necrosis of the bone and final dropping off of the limb, is the case, in which instance healing, cicatrization and the formation of a stump take place.

Another form is periostitis of the bone of a finger, hand, toe or foot, whereby tumors, abscesses and sinuses form. By means of a sound, necrosis is usually detected. The suppurative tumor remains open until the diseased bone disappears, healing afterward following. The development of this form of leprosy differs in different individuals. Many of the patients remain apparently the same for years, because the atrophy and contraction of the muscles progress slowly. Therefore such a one goes for many years with contracted fingers and toes. On the other hand, when ulcerative processes are present, exfoliation often is speedily accomplished.

When the toes are severely contracted the patient is compelled to walk on the tips of the toes. In spite of the reduced sensitiveness of the parts, the leper may plead for amputation of the affected member. Accidents sometimes befall a leper suffering from the nervous or anesthetic variety of the disease. Incidents were related where the patient when reclining toward heated bodies became severely burned. The accident is often followed by marked sloughing of the parts and the formation of disagreeable cicatrices. Sometimes cases of burning arise where the leper is not conscious of the injury inflicted, the accident being recognized only by some one near the patient, through the detection of the odor of the burning tissue.

Fig. 8.—A Leprous Beggar Boy. Mount of Olives in Background.

Fig. 9.—A Group of Lepers Along the Highway.

TREATMENT OF LEPROSY.

Respecting the treatment of leprosy, no specific is as yet known. All that it is possible to do is to make the patient comfortable. The average duration of life is about forty years. Some lepers live to be quite old, while others succumb to the disorder early. Extermination of the disease can only be brought about by confinement in hospitals and the intervention of marriage.

COMMENTS.

In comparing the results of my personal interview with Dr. Einsler regarding the behavior and clinical features of leprosy as it exists in Palestine, with the clinical account given by Dr. Hansen, the discoverer of the lepra bacillus, I find the general characteristics of leprosy in northern Europe accord with those peculiar to lepers of the Orient.

Permission was granted to take pictures of some of the inmates whose appearance, condition and history appealed to me as being exceptionally instructive. They convey a quite clear idea of the different forms of leprosy, especially the nodular varieties. With the aid of an interpreter brief histories were developed, an account of which I append.

DESCRIPTION OF ILLUSTRATIONS.

Fig. 1 is a picture of the "Jesus Hilfe" Hospital, giving a good idea of its location and architectural design.

Fig. 2 is representative of the four Moravian deaconesses who so faithfully nurse the lepers of the institution. They are intelligent, and thoroughly devoted to their life-work.

In conversation with the deaconesses in regard to their personal experiences with the lepers, I was deeply impressed by their zealous devotion to the patients and the risk of infection they were taking. But it seems they do not fear infection; they go about among the patients most courageously, performing the duties assigned them. They are in daily contact with the lepers, handling them, washing their clothes and dressing their sores. No case of leprosy has as yet arisen among them. Of the four now in the hospital, one has been employed thirteen years, one ten, one five, and the fourth one year.

Fig. 3 represents a man aged 30 years who has been suffering from leprosy for a period of three years. The disease first made its appearance on the face. One of the early symptoms was pain and unusual dryness of the nose, followed by external redness of the face when exposed to the sun, the discoloration later developing into purplish red. Nodules then appeared, no other part of the body at this time having been affected. The man is not married. So far as he knows leprosy did

not exist in the family, nor does he know how he contracted the disease.

When I saw him the forearms and the lower extremities showed an eruption, the eyes and arms were anesthetic, but motion was not interfered with. The patient weighs 160 pounds, sleeps well, has no appetite and complains of more or less urinary and alimentary dis-

Fig. 10.—Advanced Form of Leprosy.

turbance. Two tumors the size of English walnuts presented under the lobes of the ears, the left one being quite visible in the photograph. These tumors appeared one year ago. At the commencement of the disease impaired hearing was noted, but since the affection has become fully established the patient thinks the hearing has improved.

The left eye is affected. The eyelids are nodular, thus causing stiffness and a difficulty in closing them. Complaint is made of obstruction of the nose, which organ at present, externally, is nodular and purplish-red. In consequence of the intensely diffused infiltration and cicatricial tissue, the nose presents a broad and deformed aspect. Nose-bleed and hemorrhages from the mouth and throat are common occurrences. Soon after the first manifestations of the disease, soreness of the mouth and throat was complained of and caused considerable annoyance. At present the voice is very much impaired, complete aphonia sometimes being the case. Deglutition is difficult.

His face is almost black, or of a deep purple hue, covered extensively with nodules varying from the size of a grain of wheat to that of a small hazlenut. The nose, as has been noted, is thick, broad and nodular, while the upper and the lower extremities are covered with cicatrices. The hair, it will be observed, has disappeared from the eyebrows. The left eye shows the existence of an ulcer along the outer canthus. The upper and lower lips are both invaded by the disease, as is shown by their thickness, evidencing extensive infiltration of their structures. The hands and fingers are infiltrated and thickened. The case is typical of nodular leprosy.

Fig. 4 represents a man, also 30 years of age. He is married, but his wife left him on account of his loathesome disease. He has no children, and his wife is not affected. He declares no trace of the disease is to be found in his family. He has been ill for six years and has had sore throat for three.

Unlike the previously described case, this man does not show so characteristically the evidences of leprosy in the face. What is most striking in his condition is the extreme involvement of the upper respiratory tract. His voice is entirely gone and he is enabled only to speak in whispered tones which are imperfectly enunciated and difficult to understand.

The disease of the air-passages is rapidly growing worse. Sleep is much interfered with, owing to impeded respiration. When lying down, he says: "I feel like a dead man." The nose is deformed and obstructed, with pain in the eyes and face. The hearing is unimpaired, his eyes sore, the sight of the right one being affected. The soft palate, on inspection, was found to be entirely destroyed and the larynx was undergoing destructive changes. The right foot is nodular and anesthetic. His arms are affected in the same manner. He complains of poor appetite and intestinal disturbances. The patient is losing ground rapidly and is expected to die soon.

Fig. 5 is representative of a leper, 35 years of age. Leprosy attacked him five years ago, since which time the disease has been running a rather rapid course. It first appeared below the knee of the right leg, and afterward extended up toward the thigh. The second year of the malady the left leg became sim-

Fig. 11.—Early Period of Leprosy.

ilarly affected. At first, pain in the legs was a pronounced symptom, while later on anesthesia of the legs became manifest. Now pain and anesthesia seem to alternate. Two and a half years ago the nose became involved, characterized by nose-bleed and expulsion of

ulcerative products. Inspection of the patient, as well as of the photograph, reveals the fact that the nose has suffered materially. Deformity is present in consequence of a total loss of the triangular cartilage of the septum narium, thus giving rise to the depressed or broken-down state of the point of the nose. The man experiences trouble in swallowing and says he has had hemorrhages from the nose and throat. It will be noticed that the skin of the face and of the hands is thickened and infiltrated. Examination of the lower extremities showed the effects of leprous ulcerations.

Fig. 6 represents a leper beggar whose picture was taken outside the city walls, along the roadside. It is a woman, 21 years of age, who had the disease a few years previously. The only parts affected were the fingers and hands. The picture demonstrates, most interestingly, the peculiar behavior of leprosy, and shows conclusively Nature's effort in effecting a cure. The right hand has entirely disappeared, while on the left nothing is left but the thumb. It is a case in which the process of the disease has spent itself, and a temporary cure at least has been effected.

Fig. 7 illustrates a leper 22 years of age. His picture is introduced to demonstrate the early facial manifestations of the disease. Observation of the face shows the period of infiltration and discoloration of the skin without, as yet, nodular formations. Under bright sunlight this man's face turned a bright purplish-red.

Fig. 8 is illustrative of a leprous beggar boy 8 years old, who stands ready to receive alms, as is indicated by his outstretched hand. He is still in the early stage of leprosy, which is a family complaint, his mother having had it. Evidences of the disease became manifest two years previously, on the face, which on close inspection of the picture reveals the fact.

Fig. 12.—Large Nodular Variety of Leprosy of Face and Hands.

Fig. 9 presents a group of lepers taken along the roadside. Each of these four has a history peculiar to himself. The one on the extreme left lost his hands twenty years ago. The one on the extreme right became totally blind eight years ago. The two in the middle are not so far advanced. In two of these individuals excessive hemorrhages from the nose occurred on several occasions. They are Moslems and residents of the village of Siloam.

Fig. 10 is a case of marked development of leprosy of the face and fingers. The patient is a woman and,

so far as she remembers, she has had the malady from early childhood. Her age is 25 years. As seen in the illustration, the nose and face bespeak and indicate how destructive the lesions of leprosy may be. The invasion of the nose has been great, much of it already having been destroyed. The face is covered with leprous nodules, the integument is infiltrated and thickened, which, in combination with the nasal deformity, constitutes a pitiable spectacle of human suffering. The patient is voiceless, both the soft palate and the larynx being very much damaged. The hands and fingers have suffered. Leprosy existed in the family.

Fig. 13.—Small Nodular Variety of Leprosy of the Face.

Fig. 11 is the picture of a little girl, an inmate of "Jesus Hilfe." The child is 12 years old and has been afflicted for four years. At present there exists a nodular eruption of the arms. In addition to this symptom she suffers from an abnormally enlarged abdomen, which perhaps bears no relationship to the disease in question.

Figs. 12 and 13 are copies of photographs presented to me by the authorities of the hospital. They typically portray the ulcerative form of nodular leprosy. Fig. 12 is interesting. An excellent idea is given of the isolation of the nodules and their degenerated state. In Fig. 13 the face is characteristic of leprosy and illustrates the small nodular form of the disease.

COMMUNICATION OF LEPROSY.

Respecting the communication of leprosy, the following incident, related to me as being authentic, is rather curious and interesting: A physician living in Bogata, Columbia, S. A., after trying in every way to protect his family against leprosy, was very much astonished and grieved to find his wife in the first stage of the disease. After careful investigation to discover how she contracted the malady, he at last thought of the country woman who furnished the family with eggs. Going to her place he insisted upon inspecting the poultry yard. There, in a hole in the sand, was the woman's husband in an advanced stage of leprosy, amusing himself by throwing exfoliations from his body to the chickens, which they devoured greedily.

LEPROSY AND TUBERCULOSIS.

Owing to the fact that leprosy and tuberculosis are so nearly allied in many of their characteristics, for purposes of differentiation, I have microscopic slides of the bacilli of the two affections. The leprous specimen was obtained from Dr. Einsler and presents, most charac-

teristically, the bacilli. A striking resemblance exists between the bacillus of the two diseases. The bacillus of tuberculosis is rather long and somewhat bent; this is not the case with that of leprosy. Some authorities think lepra bacilli stain much easier than those of tuberculosis, which accounts for the difference; on the other hand, it is claimed this can not be regarded as a distinction. "But the distribution of the bacilli in the tuberculous and leprous tissue is generally so very different, the tubercle bacilli being usually arranged singly, the lepra bacilli always in large quantities in masses and clumps, that a confusion of the two diseases anatomically can only be possible in exceptional cases."

CONJUGAL TUBERCULOSIS. A STUDY OF CASE TO CASE INFECTION.

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The notion of the contagiousness of tuberculosis is largely an *a priori* conception and not based exclusively on clinical evidence. It is only within the past two decades that it has been seriously considered by the medical profession, certainly in most countries, and until Koch's discovery of the tubercle bacillus it was, if held anywhere, at least a quiescent theory. Nowadays no one can reasonably question the fact of its communicability to a certain extent, since there is ample evidence of the fact of its occasional occurrence. The question remains, what is the proportionate danger of such occurrence, and does the incidence of phthisis depend so much on direct infection as on constitutional and hereditary predisposition? There is a tendency, of late very manifest, to magnify the former and correspondingly disparage the influence of the latter, and the hereditary element in the causation of the disorder, bids fair to be repudiated by the profession, or in any case to be comparatively neglected. It appears to the writer, therefore, that it might be worth while to collect what data are available to be at least suggestive as regards this question. If we find that ordinary exposure to tuberculosis is not necessarily or as a rule followed by the disease, it would be a fact well worth noting, and if we also find that heredity seems still strongly in evidence, both facts together would go far to reinstate the formerly held notions of etiology of the disease at the expense of the modern notion of its virulent communicability or contagion. There is some authority still for the opinion that direct transmission of the disorder is rare; Sir H. D. Beevor,[1] in a recent article, concludes from an analysis of the mortality statistics of certain English districts, that the local constancy of phthisis mortality does not indicate the action of such a disturbing factor as case to case infection. He also quotes other authorities who have noticed the same facts, among them Andvord who, from a careful inquiry into the tuberculous mortality of five Swedish towns for ten to sixteen years, concluded that in like places special constancy of lung tuberculosis points to no place among infectious illnesses, a view that Beevor himself endorses.

It seemed to me, therefore, that if some other possibly more direct statistical proof of this view could be had it would be of some value. An inquiry as to the incidence of lung tuberculosis in a class in which any common heredity could be excluded and in which the possibilities of contagion or direct case to case communication of the disease are at a maximum would apparently best furnish facts bearing on the question.

1. British Med. Jour., Aug. 18, 1900.

If contact or association could cause the spread of pulmonary tuberculosis, there could be no more favorable conditions found for its transmission than the relations of husband and wife. If one of these is affected it would seem that with the popular teaching as to the contagion of consumption, nothing short of absolute immunity could save the other, the more so since we know that in hardly any case, and in none up to recent years, have there been any special precautions against contagion employed. Therefore, a study of the incidence of tuberculosis in married couples would have some value provided the facts were collected under the proper conditions. The first of these is that any series of cases fairly represents the aggregate experience or observations of the narrator. It is easy to collect exceptional facts that impress themselves upon us, but such are of no value in proving rules; what is wanted is a statement of all cases that conform to certain other requirements of the question. These are that: 1, there should be no question as to the facts, no conjectures as to diagnosis or other points, and 2, the observation should have been sufficiently prolonged to avoid the possible charge of insufficiency and consequent unreliability. It is easy to obtain accounts of apparent infection from husband to wife and vice versa, especially since the discovery of the tuberculosis germ; almost any general practitioner of long experience can report one or two. It is another thing, however, to obtain records of all the cases in one's observation in which one or the other or both have suffered, and to secure at the same time data meeting the above conditions. I have been able to secure thus far the following thirty-two cases, most of them in my own personal acquaintance, and the facts beyond any doubt as regards requirements stated above.

CASE 1.—B. J., of good family history except that his father died young, probably not of tuberculosis, married M. C., of considerable neurotic and tuberculous taint. Three sons were born; the oldest died of tuberculosis at the age of 20; the father died two years later of the same disease, the mother following him a few weeks later, after having been recognized as consumptive for a longer time than her husband. The youngest son died of tuberculosis nineteen years later, and the second son in an epileptic attack still later.

In all of these cases there was no question as to the diagnosis and it seems probable that the husband was infected by the wife, though there was a history of something like a possible lung traumatism that may have had its influence.

CASE 2.—D. J., the youngest son of B. J. and M. C. (see above), married J. L., whose family history so far as known was good, and died of typical tuberculosis some years later, the exciting cause unknown. There were no children. His wife, who nursed him through all his illness, did not contract the disease and after twenty or more years is still living in good health.

CASE 3.—J. W., whose mother and one sister were supposed to have died of consumption, married M. F., whose family history is unknown. She has survived him twenty-one years in good health. Their children are still living. J. W. died in 1880, of well-marked, typical pulmonary tuberculosis.

CASE 4.—P. C. C., whose family history was unknown, died of typical pulmonary tuberculosis in 1861. His wife, H. C. C., never showed any signs of the disease, and died in 1900 of ailments incident to old age. Five surviving children are all well.

CASE 5.—W. F. J., whose family history was dubious as to ancestral tuberculosis, and with some alcoholism in the ancestry, married M. C., whose family history was supposed to be good. He died of tuberculosis, nearly twenty years before his wife, who died of senile decay at about 80. Of three children, one daughter died of consumption before her father.

CASE 6.—E. F., whose father died of organic brain disease, married G. F., who died of tuberculosis within two years of her marriage. Her husband, who was devoted to her, exhibited

marked symptoms of the disease and was expected to follow her, but made a good and rapid recovery after her death. He is now, several years later, living and in good health.

CASE 7.—H. F. J., whose mother died at an advanced age—over 60—probably of tuberculosis, married G. S., whose brother died of tuberculosis, and who followed him herself from the same disease a few years later. Her husband married again, and died suddenly a number of years later from the effects of alcoholism. He was never suspected of being tuberculous.

CASE 8.—R. L. C., a physician of good heredity so far as known, lost his wife by consumption and was himself apparently far gone with the disease at the time. He had severe hemorrhages, but recovered rapidly after his wife's death, and lived many years.

CASE 9.—W. F. C., another physician, lost his wife over six years ago from tuberculosis. While much depressed by his loss, he showed no signs of the disease so far as known. Her father had been consumptive, carried a lung cavity, recovered by change of climate, and died at an advanced age from another cause. W. F. C. is still living and in good health.

CASE 10.—M. L., whose family history was generally good, died of tuberculosis after a long illness, during which he was cared for by his wife under conditions not specially favorable. She kept her health perfectly and is still living, over fifteen years later.

CASE 11.—H. J. C., whose family history was good, contracted tuberculosis apparently following a rather severe thoracic traumatism. He was constantly nursed by his wife, who was a daughter of M. L. (Case 10), under depressing conditions. At the time of his death she was considerably run down in health, but there was no suspicion of tuberculosis, and she is now, ten years later, in good health.

CASE 12.—T. E. W., a cornet player, whose family history was unknown, died eight years ago of tuberculosis, after a long illness. His sputum was full of bacilli for months. He lived in one room, most of the time sharing his bed with his wife, whose health continued perfect. She is now, after seven years, still living and in good health. Her family history is unknown.

CASE 13.—J. A., with a fair family history—somewhat neurotic in the collateral line—died of tuberculosis, the exciting cause unknown. His wife is unaffected, in robust health many years later. Has married again.

CASE 14.—W. K. A., whose family history was good, married A. M., whose family history was unknown, but supposed to be good. Her death from tuberculosis occurred many years ago; the husband, unaffected, has married again. Two sons are in good health.

CASE 15.—A. B. S., a pharmacist, died after a protracted illness of tuberculosis. He was especially fond of having his children about him during his illness, but neither they nor his wife contracted the disease. All are in good health over six years later.

CASE 16.—W. S., died of tuberculosis after a protracted illness, having been attended by his wife. She continued well and is, I believe, still living after thirty years. Her family history is unknown.

CASE 17.—W. G. C., married C. A., whose family history was unknown. She died of tuberculosis. He is still living and well after many years.

CASE 18.—W. C. R., whose sister was consumptive, died after several years' illness of tuberculosis. His wife, with a good family history, survives him in good health, over seven years.

CASE 19.—A. B., married D. C., whose brother died of phthisis, but who had, as far as direct ancestry was concerned, a good record, both parents living to advanced age, one dying from carcinoma and the other from apoplexy. The stock, however, was neurotic and tuberculous in collateral branches. She died of phthisis; her husband survived her many years in good health and married again.

CASE 20.—C. J., a first cousin once removed of D. C. (Case 19), died of tuberculosis lasting about a year. His wife is in good health seven years later.

CASE 21.—E. G. S., died of tuberculosis. Her husband married again and is living thirty years after his first wife's death.

CASE 22.—P. J. married N. S., whose family history was good. He died of phthisis. The wife is well four years later.

CASE 23.—C. E. W., whose family history was good as far as known, died of tuberculosis. His wife is well over two years later.

CASE 24.—A. H. died of tuberculosis, supposed to be started by trauma. His wife remained well, married again, and is still living after many years. One of her family is said to have died of tuberculous meningitis.

CASE 25.—W. F. died of phthisis. He married the sister of the wife of A. H. (Case 24), who died a number of years later from la grippe; no tuberculosis.

CASE 26.—A. V., colored, died of acute tuberculosis. His wife and children are well eight years later.

CASE 27.—R. D., colored, died of phthisis, and his wife is living and well eight years later.

CASE 28.—C. H. died of phthisis. Her husband is living and well five years later.

CASE 29.—H. A. died of phthisis, and his wife is living and well several years later.

CASE 30.—D. died of phthisis. His wife is well over two years later.

CASE 31.—C. J., whose family history was good, married A. P., of a tuberculous family—father, mother and one or more brothers and sisters had died of phthisis. A. P. died of tuberculosis; the only child of the union died young of diphtheria. The husband is well after twenty or more years, and has married again and reared a large family.

CASE 32.—E. F. C., a brother of Case 9, lost his wife from tuberculosis some ten years ago, and is still living, with no signs of the disease.

All of the above thirty-two cases were known to me either personally or through the other members of the families, and all meet the conditions stated above. At least half a dozen more might be added, the facts being reasonably certain, but not so absutely assured as in those enumerated. There was some possible uncertainty as to the health of the surviving partner a few years after the others, or the history of the fatal disease, though given as pulmonary tuberculosis, left a possible doubt as to the diagnosis. Some of these cases are interesting as regards the facts of hereditary predisposition, but I have thought best not to use them for the foregoing reasons. In all of them, however, the freedom of the survivor from pulmonary tuberculosis for several years was assured.

As before stated, it is easy to get isolated cases of apparent infection of husband or wife, but it is hard to obtain any large number of them in the observation of a single individual. It is also easier still to obtain accounts of cases where this did not occur. There is a difficulty, however, in obtaining the aggregate observations of any one physician on this point, and it is a good deal to ask of them that they should take the trouble to recall and record them. Dr. Norman Bridge, of Los Angeles, Cal., has, however, kindly furnished me with the following list of cases which he has been able to collect and vouch for as meeting the conditions of the inquiry:

1. A. W. K.'s wife died of phthisis, and the husband is well nine years later. 2. P. C. B.'s wife died of phthisis, and he died nine years later of Bright's disease. 3. G.'s husband died of phthisis, but she is well five years later. 4. V.'s wife died of phthisis, and he is well eight years after. 5. T. lost her husband from phthisis, and is well six years later. 6. E.'s wife died of phthisis, yet he is well five years later. 7. N. lost her husband from phthisis, and is well seven years later. 8. F.'s wife died of phthisis, and he developed the disease one or two years later and suicided. 9. F. lost his wife from phthisis, and is well six years later. 10. A. lost his, and is well two years later. 11. W.'s husband died of phthisis, and she is well ten years later. 12. W. also lost her husband therefrom, and is well three years later. 13. J.'s wife died from phthisis, and he is well five years later. 14. F.'s husband died from phthisis, and she is well ten years later. 15. T.'s husband also died from phthisis, and she is well eight years later. 16. E. lost his wife from phthisis, and is well two years later. 17. M. lost his, and is well four years later. 18. C.'s wife died of phthisis, and he is well five years later; has married and buried another wife with phthisis, and is well a year later. 19. B. lost his wife from phthisis, and is well three years afterward. 20. B.'s husband died from phthisis, and she is well seven years later. 21. B.'s died, and she is well ten years later. 22. G. lost her husband from phthisis, and is well ten years afterward. 23. F. lost hers, and is well two years later. 24. S. lost her husband from phthisis, and she is well eight years afterward. 25. N. lost her husband, also from phthisis,

and is well ten years later. 26. D.'s wife died of phthisis, and he is well two years later. 27. B.'s husband died of phthisis, and she died with the same disease two years later. 28. G. lost his wife from phthisis, and is well nine years later, and remarried. 29. Another lost her husband from phthisis, and is well eight years later. 30. M. lost hers from phthisis, and is well ten years later, and remarried. 31. W.'s husband died from phthisis, and she is well nine years after. 32. B. lost her husband from phthisis, and she is well four years later. 33. T.'s husband died from phthisis, and she is well nine years later. 34. A dentist lost his wife from phthisis, and he died three years afterward, also from phthisis.

Taking the whole of the above series together, certain interesting facts are at once manifest: 1. The comparatively small proportion of apparent direct conjugal infection. Out of a total of sixty-six cases we have only five of possible communication from husband to wife, or vice versa, and only three deaths, a proportion of less than one in twenty. This is the more remarkable in that it is far below the ratio of deaths from consumption to the general mortality, which is estimated by some as high as one in seven, and is probably not less than one in nine or ten at the best. It is true that the majority of the survivors of the pairs above enumerated are not dead yet, and some of them may die of consumption, but the present freedom from the disease does not speak for any actively contagious character of tuberculosis.

Another striking feature is the predominant figure of surviving wives. The wife would naturally be supposed to take more chances of contagion than the husband; she is generally the nurse and close attendant of her suffering partner. Here, however, we find 20 wives surviving their husbands, and only 11 husbands surviving wives (excluding No. 1) in my own series and 18 wives to 16 husbands in Dr. Bridge's, while 2 of the 16 died later of phthisis, and none of the wives. It is true that according to the more recent statistics in Great Britain (Newsholme[2]) the percentage of female mortality from tuberculosis is less than that of males, and the decrease of late years has been much more marked in the former, but this would not be sufficient to account for the condition here presented. So far as the facts appear, considering the probable greater exposure of the wives, they do not prove the extreme contagiousness nor communicability of pulmonary tuberculosis.

The cases of possible infection deserve a few remarks. In Case 1, of my own series, it seems probable that the husband was infected by the wife, or by the wife and the son who died before his parents. Here, however, there is the possibility of a lung traumatism having had some etiologic influence. In Case 8 of the same series, the husband was a physician, who for a time, to my personal knowledge, considered his case hopeless, and yet in spite of all the rational symptoms of phthisis, hemorrhages, etc., he made a good recovery. In Case 6 the symptoms were similar and the recovery even more rapid after the death of the wife. Such cases would appear to support the theories of contagion, but emphasize still more the fact of individual resistance; so soon as the influence of active infectious contact was done away with, the constitutional resistance came into play and the patient recovered. Another curious fact which, however, may be only an accident, is that in both series the cases of infection were exclusively from the wife to the husband. So far as it is indicative of anything it supports the other fact already noticed, of the excess of wives surviving husbands as favoring a lesser predisposition on the part of the female.

2. Elements of Vital Statistics, 1899, p. 237.

There was heredity in ascendants in at least nine of the married couples in my own series of cases, or in about 50 per cent. of those where the family history was known, and in two of these also in descendants. These figures only represent my personal knowledge of the family history, and are not exhaustive. In at least six cases the marriages were childless; in two there was direct ancestral—possible or certain—and in one collateral heredity on the part of the surviving husband or wife.

As already remarked, it is easy to obtain isolated cases of apparent contagion of phthisis, but not a large number from any one physician. Physicians of over thirty or forty years' practice in country towns, where practically every case of the disease during all that time came within their personal knowledge, could give only two or three clearly marked cases of conjugal infection from their experience, and only had a general impression that there might be more were the records available. One or two instances have been reported to me that would seem to indicate a special virulence of the infection or a peculiar coincidence of susceptibility or lack of resistance. The following, reported to me by Dr. N. M. Dodson, of Berlin, Wis., is one of this character. A. of healthy family lost his wife from consumption. In two or three years he developed the disease himself, but in the meantime had married another wife with no consumptive family taint. She also contracted the disease and her death preceded that of her husband. In another case, reported to me by Dr. George H. Simmons, of Chicago, a mother attended her married daughter who died of phthisis, contracted the disease herself, apparently communicated it to her husband and one or more of her children, all dying. In this case, however, there would appear to be a family tendency, possibly on both sides, rendering them particularly liable to the infection.

Though sixty-six cases are but a limited material from which to draw conclusions, yet the fact that they represent the full experience of two observers make the data worthy of consideration. I regret that I could not obtain the experience of other physicians, but I do not feel like blaming a busy practitioner for not caring to take the trouble to go over his notes and recollections, and to verify them; it is a task, as I myself discovered. The facts as given are at least suggestive and, so far as they go, indicate a much greater risk so far as personal danger of acquiring tuberculosis is concerned from having a phthisical parent than from having a tuberculous husband or wife.

KELOID FOLLOWING TRAUMATISM.*

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Keloid, a term first applied by Alibert in the year 1814, to a pathologic condition known as an overgrowth of scar tissue, was so named by reason of its resemblance to a crab. The term is also applied to apparent fibrous outgrowths of the skin of a similar character, formerly believeed to be of spontaneous origin, but now the theory is accepted that they are results of lesions in the skin. This is said by some authors to be a somewhat rare disease and affects the colored races more than the white. It is commonest in middle age, but may occur in any age of life. Its favorite sites are the anterior superior sternal region, the shoulders and the neck, but may occur on any part of the body.

* Read at the Annual Meeting of the American Academy of Railway Surgeons, held at St. Paul, Minn., Sept. 5 and 6, 1900.

The so-called keloid of Addison forms contractions of the skin and the fasciæ, thus giving a hide-bound appearance to the part. It rises from no other perceptible causes than cicatrices or other injuries to the skin. Sometimes the growth is imbedded in and on a level with the surface of the skin, but more frequently it is elevated. It is very firm in its consistency and usually remains permanent through life. There has been an attempt by some authors to classify these growths as true and false in accordance with the manner in which their origin seems apparent. But such differentiation is not of clinical value nor is it of any consequence, as it is true that the histologic and anatomic elements are the same in each class.

The growth, in its incipiency, appears to be a flattened and firm, though somewhat elastic thickening of cicatricial tissue. It may cover a very small area of the surface of the body or may assume mammoth propor-

KELOID GROWTHS.

tions. The surface of the growth is frequently a bright-red color or a pinkish hue, but sometimes paler than the surrounding skin. It is usually covered by a thin, smooth, and shining layer of epidermis, which is frequently easily detached. It is often painful on pressure, but may be entirely painless. The crests of the angular ridges over the surface of the tumor often have a tendency to ulcerate and bleed readily.

The rapidity of the growth is by no means symmetrical in all cases; sometimes its development is very slow, while in others it arises phenix-like and covers a large portion of the skin in a very short time. In a case of very severe burn or other severe injury the growth may or may not occupy the entire cicatricial surface. It is not uncommon for a growth of this character to make its appearance in the line of coaptation of the flaps after amputation and this form usually presents the appearance of a red, shining nodule, with an irregular surface, and from the base of the tumor various sized ramifications are seen extending into the healthy skin. This gives the base of the tumor an irregular, serrated, circular appearance. Keloids are most frequently found following wounds that covered over a large area and have healed by granulation with suppuration. The growth occasionally will have a rough, warty and sometimes scaly appearance with the base having a decidedly irregular outline.

The same person may have as high as twenty or thirty growths or may have but one. They are, however, frequently multiple and always non-symmetrical in size. B. Farquhar Curtis, of the New York Post-Graduate School, reports a case of a negress whose entire body was covered with apparently normal cicatricial tissue and presenting some of the usual characteristics of keloid. Hays reports a similar case.

It has been the observation of the author that both sexes are equally liable to attacks of growths of this kind and an apparent hereditary tendency has been noticed. In fact, families who have predisposing tendency to abnormal growths are often victims of the disease. It may occur in several members of the same family. The disease is not alone confined to the skin, but has been observed on the conjunctiva and even has been known to develop on the tongue as well.

The microscopic examination shows a more or less characteristic differentiation of these tumors with regard to their being of a special kind. They are made up of true cicatricial tissue composed of bundles of interlacing white muscular fibers running horizontally just below the upper surface of the corium. Keloid as a rule is devoid of papillæ, but if they are present they are usually perfect. The growth sometimes, however, infiltrates the corium and destroys the papillæ by pressure from beneath. In keloid which follows in the wake of a large wound, papillæ, sebaceous glands, and hair follicles are not present. The blood-vessels of and even beyond the margin of the growth show definite changes. They are surrounded by round cells which form a part of the adventitia. Fusiform cells are also found in close proximity to the vessels. Warren says that the keloid begins by a growth of round cells in some adventitia of the arterioles of the corium; these cells often becoming fusiform, finally developing into fibers and forming the tumor. Though the tumor may occasionally have a sarcomatous appearance it is not usually hard to differentiate keloid from other tumors of the skin or mucous membrane, as keloid has the characteristic cicatricial appearance, the irregular margins and the claw-like projections from the center of the growth into the healthy skin. Another point of differentiation is the tendency to recur after excision or apparent extirpation. In keloid proper the bundles of white fibrous connective tissue run parallel with the length of the growth.

Surfaces that have been denuded of skin or even deep integument by corrosive acids or alkalies are not uncommonly the sites of these growths. In fact, surface wounds of any description may give rise to the origin of keloid proper. There is no apparent specific reason given for the enlargement of cicatrices, but it is believed to be due in many cases to constant irritation of the surface.

Keloid, when located over a movable point, will often impair the motion of the member. It may encircle the mouth, nostrils, ear, eye, or any orifice of the body, and thus to a greater or less degree, impair the use, if not destroy the function of the member.

Some authors believe the growth to be of microparasitic origin.

Treatment.—The treatment of these tumors is very difficult. If complete excision is practical, a cure is imminent, yet the same predisposing tendency may promote the production of the second growth that was present in the first, and there may be a recurrence in the new scar where previous extirpation was apparently complete.

The Thiersch method of skin grafting is often successful in avoiding recurrence if excision has been complete. Scarification is worthy of consideration and in fact is often successful. The following method is commendable: Make parallel incisions over the surface of the growth the full thickness and about four lines apart. The incision should extend a short distance into the healthy skin. Cross incisions should be made likewise. For reasons apparent, in order to facilitate the operation, an ethyl chlorid spray should be used until the growth is completely frozen. Not only does this alleviate the suffering attendant on the operation, but the devitalizing effect of the process of freezing has a tendency to retard cellular activity and thus assist in arresting further development of the growth. The use of cocain for an anodyne is also commendable.

Electrolysis is recommended by Hardaway. This is accomplished by making numerous punctures in the surface of the tumor and also the surrounding skin with the needle. Care must be exercised that an extraordinary amount of electrical application may not set up an irritation and thus produce an increase in development of the growth. Firm or elastic pressure will sometimes tend to produce atrophy and thus lessen the size of the growth.

The constant application of flexible collodion, owing to its power of contractility, is said to be of benefit in reducing the growth.

Complete excision is the most rational treatment when practical, but care should be used that the flaps should be properly coaptated or, if this is not possible, the denuded surface should be thoroughly covered with skin graft.

CASE 1.—A. D., a railway fireman, aged 22, a native of Ohio, of German descent, gave a negative history of specific disease. His health at the time of the accident was good, and his weight about 160 pounds. About January 13, while coaling an engine, as he opened the door the crown sheet gave way and gave vent to a terrific escape of steam from the boiler. He was severely scalded about the head and face, neck, shoulders, anterior surface of the chest, arms and legs. Some of the burns were of the third degree. Following the burn there was a large amount of devitalized tissue detached. About June 1 he passed from my notice with the wounds healed, and his condition fairly good.

About July 1 I casually stopped at his residence and found that on the anterior surface of the right arm a keloid growth had made its appearance. It was irregular in outline, its longest diameter from above downward was about six inches and the shortest diameter 2½ inches from side to side. The growth had the characteristic deep-red color and general appearance of keloid. The keloid did not cover all the surface of the arm that was burned over, but some of the claw-like projections extended into the healthy skin. The growth was firmly set in the skin and subcutaneous tissues, and elevated above the surface, at the highest point near the center about one-half inch. At several points on the crest of the keloid were small granular, ulcerating patches that were ready to bleed on the slightest disturbance. The patient complained of intense itching, especially at night. There was some contraction of the tissues between the shoulder and the elbow, sufficient to hold the arm in a semiflexed position. This I had not noticed during his convalescence. He complained of a slight pain and some stiffness of the muscles at the site of the growth. The burn in this region, as I remember, had extended down to the muscles. There were several small keloids near the elbow and on the outer surface of the forearm, having the same characteristic color as the one described. They were nonsymmetrical in size and form, the largest one being about one-half inch in its longest diameter.

The patient has resumed his employment. The disability produced by the stiffness and contraction caused by the growth is not sufficient to interfere seriously with the use of the member.

CASE 2.—A mulatto girl, aged 15, a domestic, received a severe burn at the age of 12, over the outer and anterior aspect of the shoulder. About one year afterward, in the same region, a keloid developed that measured about three inches from above downward and 2½ inches from side to side. Complete excision of the growth and thorough coaptation of the skin with healing by first intention proved to be successful in eradicating the growth, and there has been no return. There was no history of syphilis.

CASE 3.—Mr. A., a railroad fireman, about 30 years of age, was successfully vaccinated in December, 1899. At the site of the scar a keloid developed, oval in form, with regular outline measuring one inch in the longest diameter from above downward, from side to side three-fourths of an inch. The surface was elevated above the surrounding skin. The growth was a bright-red color and nodular, with small ramifications between the nodules and some extending into the healthy skin. Complete excision of the growth followed by coaptation and primary union was successful in this case and there are no signs of return. Prior to the excision the patient complained of stinging pains and occasionally itching sensations about the growth, especially after a hard day's labor. He also complained of some stiffness of the arm and inactivity of the muscles in the region of the growth.

CASE 4.—Miss B., a ballet dancer, by some means came in contact with a natural gas fire, producing burns of the third degree on the posterior aspect of each leg, covering the entire surface from the hip to the ankle. Shortly after a very tedious healing by granulation, keloid occupied the greater portion of the cicatrices. The stiffness of the muscles, with the impaired motion of the knee-joint produced by the growth, owing to its firmness and contractile power, impaired the use of the members to such a degree as to cause her to abandon her profession. At the posterior surface of the knee-joint the motion of the knee kept up a continuous irritation of the abnormal tissues and there was an occasional fissure developing at this point, until she died with pulmonary tuberculosis three years afterward.

IMMUNITY AGAINST ZYMOTIC DISEASES

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It is not my intention to enter into the minor details of the various theories that have been advanced in regard to the production of immunity; but rather to show how this immunity is probably acquired in the majority of cases aside from a description of the exact chemical changes in the organism itself. A brief consideration of the chief theories and factors, however, may not be out of place.

PHAGOCYTOSIS.

The presence of bacteria within the white blood corpuscles was first noted by Koch in 1878. These bacteria—bacillus of mouse septicemia—according to Koch's statement, penetrated the white blood-corpuscles and multiplied in their interior. Sternberg, in 1884, stated that it was not improbable that the white blood-corpuscles digested or destroyed bacteria. Metschnikoff further elaborated this theory, which is now known under his name. Metschnikoff divided phagocytes or

devouring cells, into two groups: fixed phagocytes, such as endothelial cells, giant cells of tubercular lesions, etc., and free phagocytes. He did not, however, claim that all leucocytes were phagocytes, but divided the white blood-corpuscles into three classes, of which two, the macrophage and microphage, had the power of taking up and destroying bacteria, while the third, the lymphocytes, did not. While there can be no doubt about the ability of the leucocytes to take up foreign bodies, and bacteria must certainly be included among these, still there are many facts speaking against their power to destroy them. It is probably as Koch supposed in the case of the bacilli of mouse septicemia, namely, that the bacilli enter the blood-corpuscles and multiply in their interior. In gonorrhea and epidemic cerebrospinal meningitis the specific organisms certainly seem to thrive and multiply within the leucocytes. The leucocytosis found in many of the infectious diseases, while probably a defensive arrangement of the organism, evidently acts in a different manner than Metschnikoff supposed. Metschnikoff's theory has been widely discussed and still has many adherents; of late years it has, however, been superseded to a large extent by the interest taken in the defensive power of the blood serum itself.

Alexins.—This name was proposed by Buchner, for certain antiseptic substances found in extravascular blood serum which destroyed bacteria. According to Buchner, these substances are of an albuminoid nature. Hankin proposed the name "defensive proteids," for these. He divided them into two classes: Those found naturally in normal animals, which he called "sozins," and those found in animals that have acquired an artificial immunity, which he called "phylaxins." According to Emmerich and Loew, this antiseptic substance is a proteolytic enzyme or endoenzyme, as they called it. Both these substances—alexins and endoenzymes—are supposed to be non-specific and act on any species of bacteria. While these substances certainly destroy bacteria experimentally it is rather questionable whether they do so to any extent in the living tissues. The experiments of Lubarsch[1] speak strongly against their protecting power. Lubarsch found that while 1 c.c. of the extravenous blood of a rabbit—an animal known to be very susceptible to anthrax—destroyed 29,200 anthrax bacilli, 620 of these bacilli injected intravenously killed the same animal. On the other hand, Lubarsch showed that the dog, an animal very insusceptible to anthrax, even when considerable quantities of the bacilli are injected intravenously, had but a small amount of bactericidal substance in its blood. These experiments show that there is no connection between the natural immunity of an animal and the bactericidal power of its blood. As far as a natural immunity is concerned, we know no more now than we did in 1884, when Grohman[2] said, in his thesis, that: "In the plasma of the blood the organism *possibly* possessed a disinfecting medium." We now come to the subject of acquired or specific immunity.

Antitoxin.—That after passing through an attack of an acute infectious disease the animal organism is to a greater or lesser extent rendered immune against an attack of the same disease is a well-known fact. What causes this immunity, on the other hand, is something we know very little about. Experimenters have shown, however, that some substance is formed in the blood plasma that neutralizes the toxin of the specific germ. Just what this substance is or how it is produced in the body is still largely a matter of speculation. To this immunizing substance the name antitoxin has been given. The experiments of Ogata and others seem to show that it is a globulin. It may, however, be a substance of a different nature that is carried down with the globulin precipitate. Formerly it was believed quite generally that bacteria produced two poisons, one which produced the disease and later another which neutralized the first, both being a sort of secretion of the germ itself. Now, hwever, we know that while the toxin is a product of the bacterium, the antitoxin or neutralizing substance is formed in some way by the tissues of the invaded animal. As before mentioned, the exact manner in which this substance is formed is not known. Ehrlich, Baumgartner[3] and other German authors have, however, built up a very ingenious and plausible theory in regard to its formation, known as the "Seitenketten theory." According to this, we must form in our mind the following picture of a cell: A cell is composed of a nucleus or central group and numerous different atoms or filaments radiating from this nucleus. In order to understand this picture we must think of it not in a histologic, but in a chemical sense, the cell being in this case to be compared with a molecule of a complex organic substance composed of many different atoms. The poison or toxin formed by a given germ has a chemical affinity for a certain filament or atom of the cell and unites with it chemically. Through this union of an atom of the toxin with one of the filaments or atoms of the cell the poison is enabled to act directly upon the central group of atoms or nucleus of the cell. Sickness in a clinical sense depends on the impairment or destruction of the nucleus. If the action of the toxin is very strong the nucleus is destroyed. If, however, the nucleus retains its vitality, it will throw off that atom or filament which has been rendered obnoxious by uniting with the toxin, and replace it by a new one. This is a regenerative process of the cell; now, in regenerative processes as a rule more material is supplied than is needed in repairing the defect, therefore the same thing occurs in the cell. Several new filaments are formed to replace the one that has been discarded; as, however, only one is needed to complete the cell or molecule, those that have been formed in excess of the need will also be thrown off. These latter filaments or atoms floating in the blood constitute the antitoxin. They protect the body because they have a chemical affinity for the toxin. Therefore when the toxin again enters the circulation it enters into chemical combination with these discarded atoms, and in this way its capacity for harming the cells is destroyed. The blood serum of an animal containing such atoms, when injected into another animal, renders the second animal immune, as with the serum are also injected those atoms having the power to combine with the toxin. As this combination of the toxin with the cell atom depends on a certain chemical affinity, the immunity conferred must be specific, as the toxin of any other disease would have no affinity for this particular filament or atom. A different toxin would have an affinity for a different filament or atom out of the many that the cell possesses. This theory, while it shows how the toxin is neutralized, does not explain how the germs themselves are kept from multiplying. The followers of the "Seitenketten theory," just explained, believe themselves, as occurs with their toxin, namely, that the bacterium causes the discarding of a filament or atom having a chemical affinity for it, and that this discarded atom has an affinity for the germ as well as for a ferment-forming body contained in the blood serum.

This ferment-forming body, by uniting with the atom, gives rise to a ferment that in turn destroys the germ. So much for the chemical and histologic factors concerned in the production of immunity.

Let us now consider the matter from another aspect. It is a well-known fact that, during an epidemic of a contagious disease, only a limited number of those who are exposed contract the disease; the remainder for some reason or other appear to be immune. Various factors seem to be concerned in the production of this immunity:

1. *Race Immunity.*—As instances of this might be quoted the comparative immunity possessed by the negro of the South against malaria and yellow fever; and that of the white man against bubonic plague, when compared with the susceptibility of the Mongolian. No satisfactory explanation of this phenomenon is known.

2. *Hereditary Immunity.*—Occasionally persons will be seen in whose family a certain common infectious disease has not occurred for generations, although the members of each generation passed through one or more epidemics of that particular disease and took no special precautions to escape it.

3. *Immunity Conferred by a Previous Attack.*—This has been considered in speaking of the antitoxins.

4. *Age Immunity.*—As is well known, certain of the infectious and contagious diseases attack by preference persons of a certain age. Thus chickenpox and whooping-cugh are essentially diseases attacking children during the first decade of their lives, while typhoid fever and epidemic cerebrospinal meningitis are found chiefly in young adults.

5. *Immunity Conferred by Prolonged Residence.*—As examples of this we may cite yellow fever. Persons who have lived all their lives in a yellow fever region are less apt to contract this disease, and when they do contract it the disease usually manifests itself in a milder form than it would in a new comer.

6. *Temperament.*—This and the state of the general health are factors that appear to be connected with the susceptibility of a person to an infectious disease.

THEORY FOR IMMUNITY.

We have now briefly considered the chief facts known to influence susceptibility. In none, however, except in the case where a person has acquired immunity by passing through a previous attack, have we been able to find an explanation as to how immunity is really acquired. I will now take the liberty to present a theory which, although the fundamental facts upon which it is based are well known, presents them in a new light, and may possibly aid in dispelling the mystery surrounding this question. This theory is as follows: The majority of persons acquire immunity against the common infectious diseases through the agency of the specific germs of these diseases. The germs entering the body in quantities too small, or of insufficient virulence to produce a typical attack of the disease, but in sufficient numbers and virulence to form an antitoxin within the body, which protects it against a further invasion, Nature, thus protecting the majority of us in a similar manner against most of the infectious diseases as we now try to protect ourselves artificially against typhoid fever and cholera.

Let us now consider the facts upon which this theory is founded. First of all we must consider the protection against smallpox, afforded by vaccination, being the production of an atypical attack of smallpox which protects against a typical one. Before the introduction of vaccination, however, only a small proportion of the population were attacked by smallpox. Why did the others escape when, in those days, the entire population was exposed? The only plausible explanation is that enough of the virus was absorbed by those who escaped to produce an anti-body, but not enough to produce typical smallpox. The infection may have shown itself in the form of a slight illness, diagnosed perhaps as a cold or disturbed stomach or something of that sort. It is not even necessary that this immunization took place during the presence of an epidemic of smallpox. The germ of this disease probably can become attenuated to such an extent that it may be widely distributed in a community without there being any cases of what we call smallpox, although it may possess virulence enough to produce an antitoxin against true smallpox. Of course, in speaking of smallpox we can only consider the matter as a hypothesis, as the germ of this disease is not known, but as we know that other germs may be so attenuated as to produce immunity without the production of a typical attack, there is no reason why this should not occur with smallpox. The protection afforded by vaccination at least seems to indicate the possibility of it.

Yellow fever furnishes a good example of the application of the theory mentioned. It is a well-known fact that during an epidemic of this disease in the tropics, almost every new arrival from parts where the disease never prevails contracts it, while only a small percentage of the natives are so afflicted. How are we to explain this state of affairs? The germs are certainly virulent, otherwise the new arrivals would not contract the disease in its typical form. Some will claim the immunity is inherited through some ancestor who has had the disease, while others will speak in rather a vague manner about "acclimatization," without explaining further.

Acclimatization certainly has considerable to do with the production of immunity against yellow fever, and the way it acts is probably as follows. The germ of yellow fever is probably always, or almost always, present in the countries of the Spanish Main and certain other districts, and is also probably widely distributed. But it is not at all times virulent, only becoming so under certain conditions that we do not as yet fully understand. While it is only at certain times and under certain conditions sufficiently virulent to produce typical yellow fever, it is probably at most other times virulent enough to produce an antitoxin in a susceptible person. This production of an antitoxin may give rise to none or only very slight symptoms, just as the artificial immunization against hydrophobia and typhoid fever with attenuated virus gives rise to only a very slight reaction. Bacteriologists will be very apt to take exception to these statements and say: "If the germ of yellow fever is so widely distributed in those regions, it must sometimes be found in apparently healthy individuals and in the bodies of those who have died of other diseases." In all probability this is the case, and I think the finding of Sanarelli's bacillus icteroides in the bodies of persons who have died of other ailments than yellow fever speaks rather in favor of its being the cause of the disease, although Sanarelli's opponents deny this. It is absolutely unreasonable and illogical to suppose, as is now generally done, that the germ of a contagious disease must only be found in the body of a person having a typical case of this disease, and that finding it in other places shows that it can not be the cause of the affection. I believe that a good many of the inhabitants of Cuba carry the germ of yellow fever in the dirt under their finger-nails. It is probably not viru-

lent, at least not enough so to give rise to typical yellow fever, but it is the specific germ nevertheless, and under certain conditions, can become virulent.

The same rule applies to the germs of most contagious diseases. They are not by any means limited to the person having the disease, but are comparatively widely distributed. Let us consider measles in the light of the theory indicated. During an epidemic of measles on the island of Savai, one of the Fiji Islands, described by Davies,[4] 1000 persons out of a total population of 34,500 died of measles, and not a single inhabitant escaped contracting the disease. This is only one example, as similar ravages have occurred from measules in the Sandwich and other South Sea islands. Again, in Savai the disease had never occurred before and the germs that were introduced came from a typical case. It is significant that not a single native escaped, as this fact shows that the measles' germ had never had its habitat on this island. In this country and in Europe a large percentage of people never contract measles, although practically every one has, at some time or other, been exposed to the contagion. Why is this? Reverting to our theory it is easy to find an explanation. The virus of measles is probably widely distributed and we all come in contact with it, but it is not at all times sufficiently virulent to produce typical measles, however, it is virulent enough that upon entering the body it produces an antitoxin that protects us against a typical attack.

I wish I knew how many of the ephemeral fevers that occur in childhood are in reality an immunizing process against some severe infection in later life. Probably a great number of them would prove to be such. Diphtheria is another contagious disease against which the majority of persons become immune without ever passing through a typical attack of the disease. Hermann, of New York, some time ago made an attack against the specificity of the Klebs-Loeffler bacillus, by claiming that the finding of this germ in apparently normal throats proved that it could not be the cause of diphtheria. There can be no doubt that the Klebs-Loeffler bacillus is sometimes present in normal throats, although not as frequently as Hermann's statistics seem to show. The presence of this germ in healthy throats does not prevent its being the cause of the disease, however. In the majority of these cases it is probably either not sufficiently virulent or not present in sufficient numbers to produce a membrane; but on the other hand it may, and probably often does, produce an antitoxin protecting the organism against a typical attack. Previous to 1892 typhoid bacilli were frequently found in Chicago's drinking water, and probably every native of the city, at some time or other, imbibed some of them; still, only a small percentage contracted typical typhoid. Among the students of Rush Medical College, a considerable number of cases of typhoid fever occurred during this period, but the great majority of them were among new arrivals from outside districts, while of those students who had always lived in Chicago very few were afflicted. How could this be explained? Again reverting to our theory, a plausible answer is that through the entrance, at various times, of small quantities of not very virulent bacilli, most of the natives had been rendered immune very much after the manner in which immunity is conferred artificially through the typhoid vaccinations.

The list of diseases to which this theory would apply could be extended considerably, but I will close the list with a few remarks about scarlet fever; as my best energies, during the past two years, have been devoted to the study of this disease in its different aspects. During the last two winters we have had an epidemic of scarlet fever extending over the entire city almost uniformly. It is safe to say that there was not a school building or a block of houses in the city in which no case of this disease occurred. It was no uncommon occurrence, especially in the poorer districts, to see children who had this disease, on the street, while scaling was still in progress. The contagion was practically everywhere. Still, not every one exposed contracted typical scarlet fever; the great majority escaped; because most of them had probably been previously rendered immune through a slight infection with the scarlet fever germ, which had not been recognized. Thousands of people have been immunized in a similar manner during the last epidemic, by contracting a scarlatinous sore throat. One of the chief arguments advanced against the specificity of the diplococcus scarlatinæ, is the fact that it was frequently found by certain investigators in normal throats and in other places where it seemingly did not belong. It was found in those places during the presence of epidemics of scarlet fever. I do not know how these investigators would have been certain that it was the diplococcus scarlatinæ which they found, as it appears that they went entirely by its microscopic appearance when grown on ordinary media; still, even if this were the case, it would not speak very strongly against this germ being the causative factor of scarlet fever, as the contagion was necessarily widely distributed in the city. As I said before, I think the germs of the common contagious diseases are not confined to the person having the disease, but frequently occur in other places, though those found in a patient having the disease are more virulent and therefore more apt to reproduce a typical attack in a susceptible person whose body they enter, while those from other sources would not do so.

Supposing that immunity is conferred in the manner indicated, it would be interesting to discover how the germs enter the body. Probably their mode of entry is similar to that which occurs in a typical attack of a given infectious disease. Thus, to produce immunity against typhoid fever the germs probably multiply in the gastro-intestinal tract. In yellow fever the germs probably enter by inhalation. In scarlet fever and the majority of the infectious diseases of childhood they undoubtedly have their nidus in the nasopharynx.

In this connection it might be well to anticipate a possible objection against this theory. It might be asked why is it "that very young infants seldom contract scarlet fever, diphtheria and some of the other zymotic diseases? They are certainly not protected in the manner mentioned in the theory." It must be admitted that they probably are not, but they are protected in a different manner. I have just stated that infection in childhood usually takes place through the nasopharynx. In very young infants the crypts of the tonsils where bacteria may lodge and the lymphoid tissue that absorbs them or their toxins are developed to only a slight extent; thus the bacteria are deprived of a suitable breeding-place and do not multiply, while even if they did multiply, they or their toxins could not enter the circulation. That this explanation is plausible will be readily seen if we remember how much more apt children with enlarged tonsils are to contract diphtheria, scarlet fever and measles.

By deducing from the facts known about zymotic diseases, I think the following conclusions are justified:

1. In districts where a certain zymotic disease is endemic the germs of this disease are comparatively widely distributed, although in a very much attenuated form. Epidemics are due to these germs becoming virulent either by repeated passage through the animal body, or in some other manner not as yet known. It is only after attaining a certain degree of virulency that they are capable of producing a typical attack in a susceptible person.

2. Immunity or insusceptibility against a given zymotic disease is usually acquired through the activity of the attenuated germ, which, although not capable of producing a typical attack, is still capable of producing an antitoxic body.

3. The presence of pathogenic bacteria in the normal body, described as a "latent infection" by Adami and others, is in accord with the theory formulated. These bacteria are probably an attenuated species, and their office is a beneficial one, as, through their activity, the animal organism is probably saved from a severe infection. The term "latent infection" is, however, a misnomer, since through this latent infection the possibility of an active infection is precluded in most cases.

Before closing I would like to state that a fairly careful search through the literature on immunity failed to show that the theory described had been anticipated by any one, although the idea is perhaps not original with me. Of course I may have overlooked some of the literature. I might also add that my remarks about yellow fever are not made from personal observation, but by deduction from literature on the subject.

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YELLOW FEVER AND ITS TRANSMISSION.

CHARLES FINLAY, M.D.

HAVANA, CUBA.

In an editorial in THE JOURNAL of February 23, I notice an allusion to some variances between my own views and those of Drs. Reed, Carroll and Agramonte on the subject of the transmission of yellow fever through the agency of mosquitoes. Lest this difference of opinion should be misunderstood or its purport exaggerated, I beg to make the following statements:

My readiness to accept the incontrovertible demonstration brought forward by those gentlemen as to the transmissibility of yellow fever through the agency of the Culex mosquito—wrongly assimilated, it appears, to the C. fasciatus—was a foregone conclusion, inasmuch as I had asserted and experimentally demonstrated to my own satisfaction the identical fact twenty years ago. This circumstance did not influence my judgment, however, in any degree, and only added to my admiration of the very perfect manner in which the recent investigation was carried out. I also have always supposed that this particular species of mosquito must be the natural agent of transmission through which the disease is normally propagated in Havana, probably to the exclusion of the other species, since its biologic requirements agree very thoroughly with the usual course of yellow fever epidemics in this city, whereas those of the other species do not. The point, however, has not been experimentally investigated, and it is quite possible that, in other yellow fever centers other species of that genus may be found to assume the rôle assigned to the Culex mosquito in Havana.

The most important and original discovery made by Drs. Reed, Carroll and Agramonte, in their interesting investigations, and that which, above all other considerations, entitles them to our warmest praise and congratulation, is the fact which they have brought to light showing that, under certain conditions which they have accurately precised, for the particular season of the year in which they were experimenting, it is possible to contaminate a mosquito through one single bite on a case of yellow fever, so that, after the lapse of a proper interval of days, a bite from the same insect will almost certainly develop a mild attack in the non-immune whom the insect may thereafter sting, and the contaminated mosquito will retain that faculty during the remainder of its life.

The value of this discovery is, to my mind, inestimable, not only for having enabled the experimenters to produce absolutely convincing proofs of the transmission, but for opening the way toward a very great improvement in my former methods of preventive inoculations, so that we may confidently look forward to a process by which immunity will be safely conferred within a brief space of time to new-comers who may be willing to undergo the comparatively slight inconvenience of a mild experimental attack of the disease.[1]

Although this important discovery was made in accordance with precedents derived from certain known facts concerning the malaria infection, it does not follow that the germ of yellow fever must, of necessity, also be an animal parasite. The circumstance that, by allowing a certain interval of time between the contamination of the insect and the inoculation, the efficacy of the latter is undoubtedly enhanced, I had myself surmised, without taking into account that the germ might require to go through any special transformations within the body of the insect; my idea was simply that the prolonged contamination would allow the germ to multiply to such an extent that a more abundant supply would be secured for the salivary and venom glands of the infected mosquito. Regarding the curious fact that the contaminated insect retains the power of reproducing the disease during its life, this is not a privilege appertaining exclusively to animal parasites, since it is also observed with regard to the bacilli of leprosy and of tuberculosis in man.

As a practical demonstration that fomites, in the usual sense of the term, are incapable, per se, of conveying the yellow fever infection, the experiments at Camp Lazear were very significant and most ingeniously devised. The generalization of the principle is, however, only justified by the circumstance that the outcome of those experiments affords a direct corroboration of what actually occurs in nature, experience having repeatedly shown that in localities where the disease appears to be intransmissible—as in the City of Mexico, in Petropolis, and, in 1853, at Memphis, Tenn.—the fomites which should have developed around all the imported cases of yellow fever have been powerless to bring about its pro-

1. The innocuousness of the method would still be grounded upon the same argument which I submitted to Captain-General Blanco, in 1881, when I solicited his permission for my first experiments with contaminated mosquitoes, and which at once appealed to his clear-sighted judgment. "If," I argued, "the mosquito is truly the indispensable agent of transmission which I conceive it to be, the mildest, recognizable attacks of yellow fever that occur in nature must be attributed to the smallest efficient dose of the yellow fever virus that may be introduced into the non-immune, a condition which ought surely to be fulfilled by applying only one mosquito which has only once before stung a yellow-fever patient." The great improvement which results by reason of the recent discovery consists in the facilities which it affords for obtaining direct evidence that the inoculation has been successful.

pagation. The only point, therefore, which remained to be proved was the fact that fomites which might be considered of the worst kind should likewise fail to do so even within the regular yellow fever zone, and that the very men who had been exposed with impunity to their action, would thereafter take the infection through the bite of a contaminated mosquito; all of which the experimenters have demonstrated to perfection.

That not only fomites, but anything that might be considered as a possible receptacle for live mosquitoes, of the infectious kind, should be dealt with in a manner that would ensure the destruction of those insects is a self-evident corollary of the mosquito theory. Precautions should be taken even against the importation of dry eggs of the Culex mosquito into places where that insect is not usually found, lest a brood of those insects should develop during the summer season, thereby greatly increasing the difficulty of controlling the propagation of the disease if a case of yellow fever were accidently introduced.

My objection to some of the conclusions specified in the "additional note"[2] refers merely to their exclusiveness and to the hard and fast rules which have been set down without sufficient evidence in their support. I have elsewhere alluded to these objections as referring to matters of minor importance, and so they appear to be when compared to the all-important facts for which we are indebted to Drs. Reed, Carroll and Agramonte. From a sanitary point of view, however, they require to be looked into. If it be admitted that after the third day of an attack of yellow fever mosquitoes can no longer be contaminated from the patient, the inference must be that after that period it is quite superfluous to keep mosquitoes away from the patient, and if it were true that the contaminated mosquito can never transmit the infection until twelve or more days have elapsed since its initial contamination, non-immunes might visit with impunity, during their illness, the first cases that occur in a locality previously free from infected mosquitoes. I have, indeed, positive evidence to show that, in the summer season at least, those rules do not always hold true. A fresh mosquito was applied on August 13, 1883, to a hemogastric case of yellow fever whose attack had set in on the 8th; two days later, on the 15th, the same insect was applied to a second case of hemogastric yellow fever attacked on the 10th; finally, on the 17th, the insect was applied to a non-immune whose isolation from other sources of infection had been perfectly satisfactory; nine days later, on the 26th, this person was taken sick with a mild, but well-characterized attack of yellow fever, and subsequently resided over ten years in Havana without ever experiencing any illness which could possibly be referred to the yellow fever infection. This case, however, as well as a few others among my 104 inoculated subjects (1881 to 1900), merely shows that the rules set down by Drs. Reed, Carroll and Agramonte are not so absolute as they have imagined. With this reservation, I have no hesitation in admitting that the general principle which they have discovered and which, in their hands, has given such brilliant results, is the right one to work upon, especially when it is desired to contaminate the insect with only one bite upon a mild case and within the first days of the attack. It is more than likely, indeed, that the average time required for the complete contamination of the mosquitoes will be found to vary at different seasons of the year, and I feel certain that, when this point comes to be investigated, the minimum in summer will *occasionally* be found reduced to a limit as low as *two days* for the interval between the initial contamination and the date on which the insect may already be in a condition to reproduce a mild attack of the disease; in such cases, too, the period of incubation, according to my personal observations, is apt to extend beyond its usual limits of two to eight days. This circumstance may, perhaps, be accounted for on the supposition that the quantity of virulent germs inoculated in such cases has been so small that a prolonged incubation becomes necessary before their number can reach a figure which is capable of developing the outbreak of an attack. This diversity in the period of incubation might be considered another point of analogy between the yellow fever germ and the malarial parasite. Major Ronald Ross[3] himself having declared that "there is a well known period of incubation" (after the bite of the malaria-mosquito) "lasting from two days up to twenty, or even longer—the usual period being one or two weeks."

160 Campanario Street.

2. JOUR. AM. MED. ASSN., Feb. 16, p. 431.

SOME TECHNICAL SUPPLEMENTS IN COMPLICATED ENUCLEATIONS.

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Every neat operator takes pride in delivering an enucleated eye-ball as clean as a peeled onion, but now and then conditions arise which make this result exceedingly difficult, if not entirely impossible. Among the circumstances interfering with neat work are:

1. Venous stasis and edematous infiltration of the integuments of the lids.—The lower cul-de-sac is then almost effaced and does not hold a speculum, eversion of the inferior lid allowing the wire to slip. A Desmarres retractor is equally unsatisfactory, while a sharp tenaculum is apt to inflict damage. In such cases I have worked with the greatest convenience with the help of sufficiently stout suture threads. One is passed through the upper lid and another through the lower about 3 millimeters from the free border and near the center of the palpebral fissure. The ends of each suture are then tied, both to prevent slipping out and to afford a loop for the finger during retraction.

2. Rupture of the eye-ball or ulcerative perforation of the cornea.—All surgeons are familiar with the folding tendencies of a collapsed bulbus and the consequent liability of such folds to be cut by the scissors. This is especially annoying when one attempts the longest possible resection of the retrobulbar portion of the optic nerve, as the disappearance of a well-distended ball removes the only landmark from which to judge distance posteriorly by the touch of the scissors. I remember my keen mortification in one such case (practically the whole cornea had been carried off by a piece of flying bolt), where I cut the nerve, as I supposed, but delivered the remnant of the ball with a hole at the posterior pole large enough to admit a heavy pencil. To avoid such troublesome annoyances I apply two remedies, namely, *a*, suturing; *b*, intrabulbar injections. Whether ulcerative or traumatic, the perforations are closed by firmly tied stitches placed very near to one another. If the loss of the intraocular contents is only slight, enucleation may begin; but if much collapse exists, I inject normal salt solution. A very fine needle plunged obliquely through an uninjured portion of the tunics of the globe will not allow regurgitation after withdrawal. Occasionally the salt solution will escape on account of inefficient suture closing, either

from the nature of the wound or the fault of the surgeon. In such cases paraffin injections are most valuable. The paraffin should be sterilized by boiling, but not be injected too hot. A few drops of a sterile 1 per cent. cocain solution renders the intrabulbar tissues quite tolerant. It should be remembered, however, that the paraffin syringe used must be kept quite hot and that the lumen of the point should equal at least that of a good-sized lachrymal point, otherwise interminable clogging will discourage the operator.

External canthotomy is practiced by me wherever it seems to hold out any advantages during the work.

Special Article.

ON THE PLAGUE IN SAN FRANCISCO.

Since March 6, 1900, when the first case of plague was recognized in the city of San Francisco, THE JOURNAL has called the attention of its readers from time to time to the reports of further cases occurring there and has emphasized over and over again the necessity of more active and intelligent measures of suppression than those which, owing to the unfortunate disputes which have arisen among physicians and politicians in California, could be, under the circumstances, undertaken. Thanks to certain reliable correspondents on the Pacific Slope, we have been kept very fully informed of all that has happened there during the past year, especially of everything connected with the plague situation.

A PANICKY CONDITION.

The findings of the bacteriologists of San Francisco, confirmed as they were by the careful microscopic studies of one of the most skilled bacteriologists in America—Dr. Kinyoun, of the U. S. Marine-Hospital Service—the latter having made his other observations doubly sure by the obtaining of positive results from animal experimentation, led the Board of Health of the city to undertake active measures to wipe out the disease. For a short time San Francisco was in a somewhat panicky condition. The newspapers were alarmists; the general public and most of the physicians had had no personal experience with plague; the immediate dangers were overestimated by nearly everyone; it was believed by many that a general epidemic was imminent—and measures of suppression were resorted to, which, though shown by experience to have been in some respects too severe, in others imperfect or, perhaps, in the light of later knowledge in certain particulars, actually dangerous, were, when the time, place and state of knowledge of the subject are considered, those that the authorities there, or other authorities similarly placed, might naturally have been expected to undertake. The spread of the disease was positively prophesied; a rope was run around the thirteen or fourteen blocks which constitute the Chinatown of San Francisco; the Chinese were forbidden to pass beyond this rope into other parts of the city.

CHINATOWN QUARANTINED.

All sorts of difficulties arose immediately. A large proportion of the Chinese spend the day as servants among the whites, either in private houses or in hotels, and the quarantine not only deprived these Chinese of employment but also led to a most painful embarrassment of the whites, an embarrassment that can be fully appreciated only by those who are conversant with the high degree of dependence on Chinese service which obtains in San Francisco. The quarantine guard had to be hastily recruited; some of the men appointed were, perforce, unsuited for the positions they held and the city officials were accused, in all probability unjustly, of favoring political ward-heelers with billets, the accusers going so far in some quarters as to intimate that the Board of Health had instigated a plague scare partly to permit of the appointment of their political friends to remunerative positions, but more particularly to influence the disposition of several thousands of dollars then under consideration for appropriation. That the quarantine cordon about Chinatown was insufficient to do what was intended, viz.: to keep all the Chinese in Chinatown, there can be no doubt. Our correspondents inform us that despite the measures taken large numbers of Chinese left their quarters daily, appeared at their regular places of service, and returned to Chinatown to sleep at night—irregularities which they attribute partly to numerically insufficient force to man the rope, partly to the corruption of certain members of that force, and partly to the utilization of secret paths of escape over roofs and through underground passages to the world outside. Efforts were made to induce the Chinese to be Haffkinized, but as a rule without avail, even though immunity from quarantine regulations was offered to the inoculated. A murmur arose that the quarantine methods adopted ought really to spread plague if it existed, that the huddling together of all the idle Chinese, day and night, in Chinatown, with but imperfect isolation and disinfection of premises within the district in reality exposed large numbers of individuals unnecessarily to contagion. The Chinese became much disaffected; not only were a great number of them thrown out of employment but the Chinese merchants, dependent in large part upon white visitors to Chinatown for their trade, found themselves suddenly cut off from their income. Above all the great outbreak of disease prophesied did not occur. There were no more deaths in Chinatown than ordinarily; the Chinese ridiculed the idea of the existence of any unusual disease. The diagnosis of plague became doubted because the disease did not spread. Several physicians of the city, among them two or three elderly men of wide reputation, denied that the malady was plague and asserted that the health officers had been misled by certain glandular swellings very common among the Chinese and known to have existed in Chinatown for years.

MEDICAL OFFICERS ABUSED.

Dr. Joseph J. Kinyoun and the city Board of Health became the objects of newspaper venom and abuse. Nothing was too vile to be said of them; the most dishonorable motives were attributed to these men. The upshot of the conditions was that, on the application of Mr. Wong Chung, Secretary of the Chinese Six Companies, and others, an injunction was granted by Judge Morrow which compelled the raising of the quarantine about Chinatown. The Federal quarantine official at

once communicated with the Surgeon-General of the U. S. Marine-Hospital Service, in Washington, stating that plague existed in San Francisco and that the local authorities were not dealing adequately with the situation. He received telegraphic orders to place officials on the outskirts of California to inspect outgoing trains. This measure, together with the tying of the hands of the city Board of Health of San Francisco, led to considerable excitement and confusion.

The attitude of the State Board of Health was interesting to observe: for a time many of its members were convinced of the existence of plague and favored measures of extermination. A reaction set in, the *personel* of the board became much altered through the political machine, the new president of the State Board declared against the existence of plague notwithstanding Dr. Ryfkögel's report in the affirmative.

The failure of Dr. Ryfkögel and Dr. Mouser to find plague bacilli in one of the cases was heralded as proof that plague did not exist, though the examination was made under most unfavorable conditions, and Dr. Ryfkögel himself believed the case in question to have been one of plague, and had absolutely demonstrated, beyond fair contradiction, the presence of typical plague bacilli in other cases. A young bacteriologist, Dr. Pillsbury, first decided that the cases alleged to be plague were not true instances of the disease, but on subsequent examinations became convinced that he was in error. The bacteriologist of the city Board of Health, Dr. Kellogg, isolated the bacillus of bubonic plague in case after case and made recommendations to the board in accordance with his findings. The professors of pathology and bacteriology, both in the University of California and in Cooper Medical College, were asked to attend autopsies and to witness the bacteriologic examinations. Both these gentlemen were convinced that the cases under discussion were really examples of bubonic plague and made statements to that effect.

BUSINESS MEN ACTED WITH WISDOM.

It would be unfair to the commercial interests of California, and the correspondents of THE JOURNAL lay emphasis on this, if it were not stated that the representative business men of San Francisco have in this, as such men do on most occasions, displayed rare common sense, a desire to know the truth in full and to act in the best way suited to advance the interests of the community. A group of these men asked Dr. D.W. Montgomery, a leading practitioner of San Francisco and a man in whose skill and integrity they had confidence, to investigate the situation for them and to advise them. His report stated that true bubonic plague existed and advised that means for its extermination be subscribed. The merchants raised $30,000 on the spot and placed it at the disposal of the health authorities. Later, when the disease was found not to be spreading rapidly and the public, in large part, doubted the diagnosis, a part of this money was returned to the subscribers.

The whole question now resolved itself into a bitter political fight. The Governor of the state was at war with the Mayor of San Francisco. The newspapers of San Francisco, for political reasons, hailed every opportunity for besmirching the characters and reputations of the Mayor, his associates and the scientific men who stated that plague existed. In addition some of them at least openly avowed that even if plague existed the best policy to adopt was to deny the fact. The *Sacramento Bee* from the beginning declared that the reports of the bacteriologic examinations should be trusted, and urged that honest confession with proper action would do less harm to the state than suppression of the facts. The Governor of California, it is reported, went so far as to issue a proclamation asserting that plague did not exist. But occasional cases of plague were discovered by the city health authorities, the diagnosis was confirmed by Dr. Kinyoun, and reports were published in THE JOURNAL and regularly sent to Washington where they were published by Surgeon-General Wyman in the weekly reports of the Bureau.

THE FEDERAL INVESTIGATION COMMISSION.

Early in January of this year Surgeon T. H. White, of the U. S. Marine-Hospital Service, reached the Coast and toward the end of the same month a commission appointed by the Secretary of the Treasury to work under orders from Dr. Wyman arrived in San Francisco, as noted in THE JOURNAL at that time. This Commission consisted, as our readers know, of three university professors, Dr. Simon Flexner of the University of Pennsylvania, Dr. F. G. Novy of the University of Michigan, and Dr. L. F. Barker of the University of Chicago. Their academic positions, general reputation, and special knowledge of bubonic plague acquired in China and in India by personal investigations insured a thorough, conscientious and reliable report, and one which would undoubtedly, no matter what its character, be accepted by the world at large. The problem set for the commission was to ascertain the existence or non-existence of plague in San Francisco or in other ports or places in California. News of the coming of the Commission coincided with its arrival, and the Governor of the state telegraphed to the President of the United States protesting against it and urging, if the Commission were actually to go to work, that he might appoint a state representative thereto. This telegram was answered by Secretary Gage, who assured the Governor that the Commission represented the highest authority attainable, that it was independent of the governments, both Federal and local, and that the request for the appointment of a state representative could not be granted. These telegrams, together with an urgent message from the Governor, were sent to the California legislature, then in session, and used to hasten the passage of the three health bills, one appropriating $100,000 as an emergency fund to be spent by the Governor for the suppression of plague should it arise in the state, a second making it a felony for any one to report the existence of plague in the state before it had been announced by the State Board of Health and a third making it a felony for any one to handle or experiment with germs of plague carelessly within the confines of the state. Through the help of the physicians, the Mayor and the city Board of Health, and particularly the presidents of the various commercial bodies in San Francisco, the members of the Federal Commission got immediately at work. The cooperation of the Chinese was fortunately obtained

through the attorney of the Chinese Six Companies. Proclamations were issued in Chinatown ordering that all cases of illness among the Chinese, no matter what the cause, be reported to the offices of the Six Companies. One or more of the Commissioners, together with the secretary of the Chinese Six Companies, then made daily inspections of all the Chinese sick and dead. During the thirteen days when such inspections were made thirteen deaths occurred, of which six were definitely proved, pathologically and bacteriologically, to have been due to infection with the bacillus of bubonic plague. Three of the patients who died of plague were seen during life, and two of the three were definitely recognized by the inspecting Commission *intra vitam* as instances of true plague infection. One of the cases seen alive—an obscure form of the disease—was not recognized as plague even at the postmortem; it was not until after an animal had been inoculated with a portion of the spleen that the true nature of the case was determined. The six deaths occurred within eight days. The Commission telegraphed an epitome of its findings to the Bureau and subsequently forwarded its full report to Washington. Its members were ordered to communicate the results first to Governor Gage and subsequently to Mayor Phelan, and to a representative of the commercial interests of the city. To the credit of Governor Gage, be it said, he took steps immediately to co-operate on the part of the state with the Federal and city authorities in measures of suppression and extermination. His manner of procedure subsequent to the Commission's report makes it obvious that he has the good of the state at heart and that he regrets the fact that ill-chosen advisers, by their ignorance or malevolence, led him into false paths.

A delegation of prominent citizens representing the governor, the mayor and the business interests immediately proceeded to Washington and made arrangements with the officials of the U. S. Treasury Department that the city and state should take the health matters in hand vigorously and at once, the work to be done under the advice and counsel of Surgeon T. H. White, a Federal officer whose skill and executive ability have more than once successfully stood the test of the emergencies of epidemics. In order that California be not unnecessarily injured by alarmist reports of plague, the delegation urged that the report of the Federal Commissioners be temporarily withheld, and Surgeon-General Wyman appears to have consented to this for the full report has not yet been published, and even the concise statement of the results did not appear in the *Public Health Reports* until April 1—at least a month after the telegraphic report of the Commission was received in Washington.

RIGID MEASURES NOW IN FORCE.

We are informed by our correspondent that the measures for the extermination will include the institution of a plague hospital, a mortuary and a detention camp. There will be daily inspections with rigid isolation of cases and suspects, and removal of contacts to a detention camp until the incubation period is over. Not only will premises in which plague cases and deaths are encountered be thoroughly cleaned and disinfected, but a systematic inspection of Chinatown will be undertaken, street by street and house by house; rooms insufficiently lighted and ventilated will be condemned and thorough cleansing and, where necessary, disinfecting will be insisted upon. Fortunately the better class of Chinese are most sensible with regard to the affair, and will be advised by their attorney to co-operate with the health authorities, it being understood that no unnecessary measures will be resorted to and that there will be as little interference with the traditions and habits of life of the Chinese as is compatible with the thorough accomplishment of the task. The co-operation of all parties concerned is absolutely essential to the satisfactory completion of the work which has been begun, and the most hopeful feature of the situation thus far is that such co-operation has, thanks to the operations of the Federal Commission, been secured. It will be essential that all sick Chinese be most carefully scrutinized during the period of suppression, and it would seem desirable that every death among the Chinese should, in the light of the findings of the Commission, be regarded as a death from plague until absolutely proved by bacteriologic examination to have been due to some other cause. Surgeon White, in his part of the work, will be assisted by several assistant surgeons of the U. S. Marine-Hospital Service, among others by Dr. G. M. Flint of the University of Chicago, who has had personal experience with the plague both in China and in India.

PLAGUE IN SAN FRANCISCO FOR TWO OR THREE YEARS.

The fact that the members of the Federal Commission found six cases of plague in eight days, and that since they ceased work only one case has been discovered makes it extremely probable, as we have said above, that many cases of plague occur which are not recognized. The number reported for the last year is about thirty; it is safe to assume that the actual number which occurred would amount to three or four times the number discovered. Indeed, judging from the mortality tables, it seems extremely probable that though the first case was discovered in March of last year, plague has existed in San Francisco among the Chinese for at least two or three years—possibly longer.

WHY IT HAS NOT SPREAD.

How are we to explain the fact that the disease has not spread more rapidly? There has certainly been no great outbreak and the disease itself has not occurred in violent enough form to excite any great alarm in the district in which it is occurring. The explanation is not easy, but several significant facts may be mentioned. The climate is not favorable to the spread of plague; there is but little poverty in San Francisco; even among the Chinese there is an absence of the marked destitution to be met with in native cities in China; in California the Chinese are clothed, while in China and in India it is said that the people among whom the disease spreads go bare-footed and usually bare-legged, some of them wearing nothing but a breech-clout. It is possible too that owing to factors with which we are as yet unacquainted, the rats in San Francisco have not become infected; our correspondents state that there has been no evidence as yet of an epidemic among the rats in the city, and, as is well known, prac-

tically every great epidemic among human beings has been preceded by an epidemic among the rats of the place. We might think of the possibility of a low-grade of virulence among the bacilli which are at work in San Francisco, an excusable hypothesis in view of the fact that fulminating cases do not seem to have occurred and that in many of the fatal ones the illness lasted for two or three weeks. The experience is not peculiar to San Francisco, however; precisely the same kind of sneaking epidemic occurred in Calcutta for two years or more before the big outbreak and a similar history attaches to various other places.

SAFETY FOR THE FUTURE LIES IN THOROUGH ERADICATION.

And here lies the importance of the whole situation. Experience has taught us that just such sneaking epidemics as that which now exists in San Francisco can be suddenly and without special warning transformed into violent epidemics of the most fatal and extensive type. The existence of occasional cases of plague in San Francisco is therefore not so much a matter of immediate danger as it is a menace which hovers over the city, the state and the whole of the United States. The people of California and the people of the United States must not be asked to walk about daily under this sword suspended by a hair. The disease, no matter what its present nature, must be stamped out; we wish to sleep well of nights and go about our daily vocations without uneasiness.

CANDOR AND TRUTH.

A word as to truth telling in connection with this matter. The Mayor of San Francisco, the city Health Board, Dr. Kinyoun, the scientific medical men of San Francisco, certain of the newspapers outside of San Francisco and the higer class of business men in that city have not hesitated to say aloud what they believe to be true with regard to the plague situation. They are right in the view that frank confession of the exact conditions will do less harm to their city and state than will subterfuge, or misrepresentation of the facts. It is a calamity, and owing to the ignorance and panicky nature of the masses, a greater one than it ought to be, to have it announced that plague exists in a city. But Americans, above all others, should be strong enough to meet calamities bravely; if Honolulu, Glasgow, Oporto, and Cape Town have been honest and brave about such matters, ought not San Francisco to show equal candor and fortitude? Her best people are undoubtedly doing so. It is a reflection on California that the press of San Francisco has not only not stated the truth, but, ever since the managing editors of the newspapers have been familiarized officially with the contents of the report of the Federal Commissioners, they have misrepresented even editorially with regard to the situation.

SCIENTIFIC MEDICINE ELEVATED BY THE RESULT.

A most important by-product, as it were, of this plague experience in San Francisco, will be the elevation of the position of the really scientific men on the Coast. Instead of being grateful that they had in their midst men of skill and training who could diagnose accurately the conditions existing, the press and many of the public vilified these men, clamored for their removal, and did all in their power to ruin their positions and reputations. The report of the Federal Commission will tend to make Californians trust their own good men, and will lead them to hesitate in the future before taking the advice of the inexperienced, the charlatan, a corrupted press or the professional politician.

EFFECT ON OTHER CITIES.

The limitation of plague almost entirely to the Chinese population of San Francisco—there were only three plague deaths among the whites of the city during the past year—brings up the question as to the existence of the disease in Portland and other places where large numbers of Chinese live. This matter is of the highest importance in view of the fact that little is known or cared about the diseases which prevail among the Chinese in American cities. The inspections by health authorities are perfunctory and, as a rule, utterly inadequate. Death certificates are often signed simply on external inspection of the corpse, any satisfactory clinical history being available only in the rarest of instances. If recent experiences afford us any guide at all, they indicate that we may no longer refuse to be our brother's keeper; however distasteful an acknowledgement of the relation may be to some of us, it is one which for our own protection we must consent to. We understand that the Surgeon-General of the U. S. Marine-Hospital Service has already taken steps to inquire into this matter.

We have dealt somewhat fully with this subject of plague in San Francisco, for it seems to us one of unusual importance not only to the medical men but to the public generally in America. We believe too that a plain statement of the truth may do much to dispel the alarm that vague suspicions excite. We feel sure that the conditions in California at present are not such as to interfere in the slightest way with travel or commercial life in that state. There is no reason, so experts tell us, why tourists should not visit San Francisco and even San Francisco's Chinatown, just as freely as ever. The trade of the city and state should not be materially damaged by the present conditions. No disturbing quarantine measures are necessary and none will be inaugurated. That the disease may, however, be soon stamped out there, every one will hope; that the work be undertaken promptly, thoroughly, energetically and without dilly-dallying, no matter what the cost, the inhabitants of California and the whole people of the United States must insist.

FICTION AND DRUG HABITS.—The *British Medical Journal* of March 23 takes from the *Academy* the following story, which points its own moral: Professor Wyllie, of Edinburgh, in a recent lecture, related the following case. He was called one day to see a young man. As he was entering the house the patient's sister exclaimed, "Oh, it's all that horrid book!" Inquiry elicited the fact that the patient's favorite reading was "Sherlock Holmes." The young man was in a very low state, and his telltale arm was dotted with hypodermic punctures. His admiration for the most popular of paper detectives had betrayed him into the cocain habit. How many people have been brought under the baleful spell of opium by reading De Quincey's famous book? Théophile Gautier's "Paradis Artificiels" has also much to answer for.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

SATURDAY, APRIL 13, 1901.

THE OPERATIVE TREATMENT OF TYPHOID PERFORATION.

It is a well-recognized fact that there is often a marked want of agreement between the symptoms of a case of typhoid fever and the intensity and extent of the intestinal lesions. The latter, as has now been abundantly shown, may even be entirely wanting. It is, therefore, impossible to predicate in the individual case the occurrence of or the escape from perforation of the bowel and consecutive peritonitis. The latter event, it is believed further, may occur even without the intervention of actual perforation. In some instances perforation has been due to gangrene resulting from vascular occlusion and in others exceptionally also to rupture of other viscera than the intestines, as, for instance, the spleen, the mesenteric glands, the gall-bladder and to abscess of the liver.

Perforative peritonitis is one of the most common fatal complications of typhoid fever. Occasionally it occurs as the first pronounced manifestation in a latent case; or it may develop suddenly in an apparently mild case. Nevertheless, it is usually the accompaniment of cases grave from the outset. The perforation generally is single, although it may be multiple, and, in correspondence with the preferable seat of the typhoid ulceration, it is most commonly situated in the lower portion of the ileum. It is of great importance—particularly from the diagnostic standpoint—to realize that the vermiform appendix may also be the seat of typhoid perforation.

Perforation of the bowel in the course of typhoid fever is most likely to occur during the stage of sloughing of the intestinal lesions, therefore toward the end of the second or the beginning of the third week of the disease. It may, however, occur at a much later period. The ultimate or exciting cause may be distention of the bowel, constipation, excessive peristalsis, vomiting, straining at stool, or other undue muscular exertion.

The frequency with which intestinal perforation occurs in the course of typhoid fever is variable, an average of from 1.5 to 3 per cent. of all cases or from 9 to 12 per cent. of all deaths representing a fair estimate. The distinctive symptoms are sudden abdominal pain with retching and vomiting, and intestinal paresis. The features soon become drawn, the nose sharp, the extremities livid and cold, and the body covered by cold sweat. The pulse becomes frequent, irregular and small, while the temperature may be but little affected. Death is pretty sure to follow unless relief is afforded by prompt surgical intervention, although it can not be denied that in rare instances adhesive inflammation may prevent extension of the inflammatory process and thus avert a fatal issue. Keen[1] has emphasized the importance of prompt operation in cases of typhoid perforation, expressing the belief that such a course in every case—except the moribund—would result in the saving of at least one-third of the cases and possibly more. He prefers[2] as the time for operation not that of immediate primary shock, but rather within the second twelve hours.

In an important communication presented at a recent meeting of the Philadelphia County Medical Society, Dr. Wm. Osler[3] reports 3 cases of perforation in the course of typhoid fever in which operation was performed, with recovery in 1, while in 1 of the fatal cases death resulted rather from the intensity of the primary disease than from the effects of the perforation, and in the other the patient died in the course of the operation. He adds, further, that of 11 cases of typhoid perforation operated on for him while at the Johns Hopkins Hospital recovery occurred in 5, while, of 5 other cases operated on, recovery ensued in 1. Dr. Osler, in his paper, dwells especially, however, on the necessity for careful and constant observation in order to secure an early diagnosis, at times under most difficult conditions. To this end he has drawn up a schedule of specific instructions to be followed in all cases of typhoid fever in which perforation is suspected and in which special attention is directed to complaint on the part of the patient of abdominal pain, to hiccough, to vomiting, to special acceleration of pulse or respiration, to sweating or signs of collapse. With regard to the pain there should be noted the mode of onset and the situation. The state of the abdomen should be examined with regard to form, respiratory movement, the results of palpation, percussion, and auscultation, and the rectum and the character of the stools. Also the general condition of the patient should be noted, the facies, the pulse, the temperature, the respiration, the presence of sweating, vomiting and hiccough. Finally, the blood-count may yield important information, the leukopenia of an uncomplicated attack of typhoid fever being replaced in the presence of perforation and peritonitis by leukocytosis.

BOVINE AND HUMAN TUBERCULOSIS.

The greater virulence of bovine over human tuberculous infection is well known, but fears are sometimes expressed that the latter may be an exciting cause of the disease in the lower animals, and thus give rise to especially dangerous conditions for the human subject. This vicious circle has been repeatedly reported as

1. Surgical Complications and Sequels of Typhoid Fever: W. B. Saunders, 1898, p. 319.

2. Loc. cit., p. 225.

occurring, though in many of the cases at least no very thorough investigation has been made, the conclusions being purely *post hoc* in their character. It would be presumptuous to say that this infection from man may not occur as stated, but the danger may not be as great as is feared. This would certainly appear to be the case if we are to accept as correct the findings of the pathologist and bacteriologist of the Arkansas Agricultural Experiment Station, Dr. Dinwiddie, as given by him in the December Bulletin (No. 63) of that institution. He sought to elucidate the following points: 1, the degree of insusceptibility and the possibility of inducing a progressive or permanent infection in cattle by the bacilli of human pulmonary phthisis; 2, the nature of the excess of virulence of the bacilli of bovine tuberculosis over that of human origin, whether selective or general, directed toward cattle only or toward other species of domestic animals as well.

Two series of experiments were carried on under similar conditions, consisting in inoculations with cultures obtained from human sputa and from bovine tuberculous lesions respectively. Eight or more animals of each species tested—cattle, sheep and pigs—were inoculated, and this performed with large doses into the most vulnerable regions, viz., the peritoneal cavity and lungs. Cattle inoculated with cultures from human sputa proved very resistant and in no case was there what appeared a progressive or even permanent infection. Only in pigs was it possible to obtain a genuine tuberculosis, in most cases chronic, leading to emaciation; in others generalized, though not necessarily fatal. Sheep were rather more susceptible than cattle, as shown by the more permanent tuberculin reaction and the larger local lesions, but suffered no general impairment of health. With bovine cultures all three species proved highly susceptible; a generalized rapid tuberculosis was the rule. In cats, two of which were tested, the effects were comparatively slight. Dr. Dinwiddie remarks that the susceptibility to inoculation tuberculosis in domestic animals does not correspond to the incidence of the naturally acquired disease, and he thinks other factors of contagion are in a large measure answerable for the great prevalence of tubercular disease among cattle. He is inclined to attribute the greatest importance to the influence of stabling and vitiated air. The animals tested were subjected to the ordinary conditions of cattle in the country. They had access to overhead shelter and were well fed. Massive inoculations of recently-isolated cultures were made into the lungs as well as the peritoneal cavities of calves of different ages, and the animals kept under observation for long periods and subjected to repeated tuberculin tests before their final dissection. These results and conclusions correspond with the experience of the Adirondack Sanitarium, where the cattle were found absolutely free from tubercular taint, notwithstanding the greater chances of contagion from human sources. It is quite possible that occasionally conditions of susceptibility or, as Dinwiddie says, of exceptional virulence of human sputa, may exist that would make it possible for cattle to become tuberculous by contact with tuberculous human beings. But these experiments of Dinwiddie do not indicate any excessive danger of this kind. It is well that they are placed on record and they are a valuable contribution to the sum of knowledge on the subject.

There are a large number of exaggerated statements going about, many of these from medical sources, that may seem to some justifiable in view of the real peril that exists and the need of popular education in regard to it. Their publication, however, is not scientific, and it is just as well to have our attention occasionally called to facts that seem to indicate that some of the expressed views may not be as scientifically accurate as the impression created by their utterance would imply. Tuberculosis is enough of a peril; its real dangers, when stated, are formidable enough; there may, therefore, be some little consolation in occasionally recognizing facts which indicate that in some ways and in some cases the danger of infection may be less serious than some commonly-uttered statements would lead us to suppose.

THE AMERICAN ASSOCIATION OF PATHOLOGISTS AND BACTERIOLOGISTS.

The first annual meeting of this Association took place in Boston, April 5 and 6. According to the program 31 papers and demonstrations were presented, practically all embodying the results of original work in pathology and bacteriology. The requirements for admission include evidence of the accomplishment of creditable research in pathology or bacteriology, and the purpose of the Association is the "advancement of knowledge of disease." There are now in this country three or four associations of national scope with more or less similar aims, namely, the Section of Bacteriology and Chemistry of the American Public Health Association, the Society of American Bacteriologists which meets in conjunction with the American Naturalists, the Section on Pathology and Bacteriology of the AMERICAN MEDICAL ASSOCIATION, and this new Association. There is, therefore, certainly no lack of organizations for the promotion of pathology and bacteriology. Indeed there seems to be a superabundance. Two of these bodies are, however, sections of larger associations, and the Society of American Bacteriologists is exclusively bacteriological, so that the field might be considered open for the new organization, of pathologists and bacteriologists, the members of which probably felt the need of an independent organization.

The formation of organizations of this kind and scope points to healthy activity in the more purely scientific fields of medical study and investigation. But it is hoped that the differentiation and specialization made evident by this banding together of scientific workers may not be carried so far as to eliminate men of this stamp from participation in the societies and associ-

ations patronized by the practitioners of medicine who are particularly benefited by direct contact with teachers and investigators in pathology and bacteriology. And the scientific worker can not afford to isolate himself from association with practitioners who carry into clinical work the results of the laboratory. Healthy, general development of medicine rests upon thorough and sympathetic co-operation of these two groups of men, an important common meeting-place of which should and must be our local, state and national general societies. In a country of such extent as ours it is probably well that there are several associations of the kind here discussed, meeting at various places and at different times of the year. This tends to keep the interests alive in the various sections of the country, and brings it within the easy reach of all to frequently co-operate actively in the important work of medical societies. The AMERICAN MEDICAL ASSOCIATION, the representative one of all medical associations in the United States, ought to receive the hearty co-operation of all engaged in medical work, be it scientific or practical; for only then can the ASSOCIATION best represent the interests of the American medical profession. The Section on Pathology and Bacteriology, recently organized as one of the scientific branches of the ASSOCIATION, ought to receive the support of the best workers in these departments. These Section meetings will be attended by general practitioners who are interested in all that pertains to the highest development of scientific medicine, and to assist these is worthy of the best efforts of those who are working in the special branches.

POST-GRADUATE STUDY.

As ordinarily used post-graduate study means a course of study by means of which the practitioner may catch up, as it were, with the advances medical practice and knowledge have made since he graduated or since the last opportunity presented itself for polishing off the rust and tarnish supposed to form in the brain of the busy practitioner, especially in the country. The number of flourishing post-graduate schools in the large cities of the country indicates that there is a real demand for opportunities of this kind. By taking short practical courses in such institutions, the practitioner from the small towns and the rural districts not only places himself in touch with recent advances, but he gets a much needed and on that account enjoyable rest and diversion. He returns to his post of duty not only with a new medical polish, but the whole man has been revivified in a certain measure. All need seasons of rest and recreation, and the man from the country is inclined to seek the city for that purpose, while the city physician more often is inclined to go to the country. This is as it should be. Certainly the interesting and forceful personalities of leading teachers, the medical societies, the libraries, the hospitals, and the clinics of large medical centers must be attractive to the practitioner whose work tends to keep him more or less isolated with but few opportunities for the inspiration and stimulus that come from personal contact with other workers in the same field. And it can not be denied that the present state of medical education, with its numerous, utterly inadequately equipped, medical schools renders post-graduate study necessary in order that one may learn what he ought to have learned as a medical student. Viewed in this light the post-graduate schools constitute a poor comment upon our system of medical education. Post-graduate study of this sort ought to be rendered unnecessary by rapidly raising the general standard of undergraduate work.

There is, however, another kind of post-graduate study to which Sir Michael Foster has recently called attention.[1] This is the study which fits one for the task "of inquiring after new truths, of grappling not with the known, but with the unknown." It is the duty of every teacher to teach the beginner what is known, to carry on researches of his own, to train those who are no longer beginners in the way of inquiring after new truths, says Foster. This is the highest kind of post-graduate study. We have too few post-graduate students of this kind. The majority of our large hospitals are not yet organized in such a way as to render this kind of study practicable and inviting. They are not furnishing opportunities for training men for research. Undoubtedly the sick are healed and the beginners trained to some extent, but the hospitals are not to any great degree put to that higher scientific use that Foster has in mind.

"FOOLS MAKE A MOCK OF SIN."

That a disreputable resort should find the name Paresis Hall an attraction, assuming that the designation was adopted because of the supposed connection of the disease with the orgies there conducted, seems at first sight a little odd. Nevertheless, such appears to have been the idea in the name of a noted New York dive that has just closed its doors under the stress of police surveillance and regulation. It is not, however, so difficult to appreciate how a little spice of bravado such as this may have suited a certain class of dissolute patrons. Paresis, so far as its causes are known or suspected, is only a remote danger, and the name has just enough of oddity in it to draw. Other specific names a little more familiar would perhaps have the opposite effect. The comment of a religious journal on the case—that "fools make a mock of sin"—applies to physical as well as to moral transgressors, and this is a case in point.

HINDOO ZOOPHILY AND SNAKE-BITES.

According to the government statistics no less than 24,621 persons died as the result of snake-bites in India in the last year covered by the reports. To balance this 94,548 snakes were killed by human agency. This is a remarkable showing and can hardly be explained except by the heathen Hindoo's reverence for

1. The Nineteenth Century and After, 1901, 57-63.

animal life even in its most objectionable forms. A snake is one of the easiest of all animals to kill, a venomous one no more difficult than any other. In this country hundreds of thousands are annually slain at the least estimate and no bounty given, and poisonous varieties are practically exterminated in most thickly settled districts. With all allowance for special difficulties that may exist, the less than one hundred thousand snakes killed in India is a most extraordinary fact. India is the paradise of vegetarians and anti-vivisectionists, but it is a paradise with altogether too much of the presence of the serpent.

REPORTED CASE OF PLAGUE IN ANN ARBOR, MICH.

An authoritative statement is printed in our news columns in regard to the reported case of bubonic plague in Ann Arbor. This seems to be especially noteworthy as a case of laboratory infection and as the only one thus far occurring in the inland region of our country—that is, assuming it to be a genuine case of plague. Its early recognition and the prompt action in treatment and disinfection should reassure any who have felt any apprehensiveness in regard to the spread of the disease; the experience that has been gained since the Vienna incident shows that the excessive fear of the extension of the disorder is unfounded. The present case, however, indicates the risks that may occur in laboratory work and the precautions that ought to be taken to avoid any possible contagion. While the actual method of the infection is not known, it may easily have occurred from some almost imperceptible and unconscious oversight, perhaps due to a very little lack of full realization of the risks incurred in the daily handling of the cultures. Thus far, however, the proof that this is a case of plague is not positive.

THE ST. PAUL MEETING AND YELLOWSTONE PARK.

The Chairman of the Committee of Arrangements notifies us that arrangements have been completed for an excursion of the members of the AMERICAN MEDICAL ASSOCIATION to Yellowstone Park. The Committee has finally succeeded in pursuading the officials to open up the park a week earlier than usual in order to accommodate the ASSOCIATION. A special train will be run from St. Paul to the Yellowstone Park and the railroad officials have promised to do everything in their power to make it satisfactory to all concerned. The rates will be very low, but how low can not at this time be definitely stated. Those who attended the meeting in 1882 will remember with much pleasure a similar excursion that was run at that time, and these will not need to be informed that the one now proposed will be full of enjoyment. Further announcements will be made later. The Yellowstone National Park contains more natural wonders than are to be found anywhere else in the world, and this will be a rare opportunity for our Eastern friends to see what this portion of our Great West possesses.

INTERPRETATION OF WISCONSIN'S LAW.

A Wisconsin judge has, if the press reports are correct, rendered a decision that affects the state medical practice act much in the same way as did that of the Texas judge who made any diploma without discrimination a qualification in that state. If his words are correctly reported—and the text is given in quotation marks—the only questions are, has the candidate a diploma from an incorporated medical college and was it properly obtained? An incorporated medical college now needs a judicial definition, but we fear the technical turn of the judicial mind would probably see in the seal and signature of the secretary of state all that is required. The Armstrong manufactories were all duly incorporated according to law; a desk and a little ink, parchment and ribbon will meet the other requisites. These being supplied, it matters not whether any other qualifications exist; the holder of the sheepskin, in the alleged words of the judge, "is entitled to practice under the law of the state although he may be a rogue." "We have got to take the law as it stands." We are sorry for Wisconsin if this is to be its law, but hope some higher court will see another possible interpretation of the statutes.

SMALLPOX AND VACCINATION IN PORTO RICO.

Letters of inquiry addressed to the Secretary of the Superior Board of Health of Porto Rico, concerning the prevalence of smallpox among the people of the island, have elicited a reply which shows in the most decided way the benefit conferred on the population by the general vaccination instituted and carried out under military auspices in 1899 by the health board. Major J. Van R. Hoff, surgeon, U. S. Army, president. This vaccination was begun in January and ended in June. Since then, until recently, no case of smallpox was reported to the Board. During December, 1900, the occurrence of 2 cases at Mayaguez, and 1 at Sabana Grande was noted. In January, 1901, 12 cases were reported from Ponce, which has continued to be the principal focus of the infection, 67 having been reported in February and 72 in March up to the 26th. The total number of cases in Ponce during this outbreak has been 151. The total number reported from all other places in which smallpox has prevailed is 288, and of this number only one case proved fatal. This alone shows to what extent the susceptibility of the natives to the influence of smallpox has been modified by the general vaccination. In fact the death-rate is so exceedingly low as to suggest a doubt as to the identity of the disease; but in the first place chicken-pox is seldom officially reported as smallpox, and in the second place Dr. W. Fawcett Smith, the present secretary of the Superior Board of Health, certifies to the nature of the cases and remarks that it was interesting to notice the regularity with which the severity of the eruption corresponded with the greater or less perfection of the scars of the previous vaccination.

THE ROLE OF ALCOHOL IN THE CAUSATION OF INSANITY.

That alcohol is not without utility will not be denied by any unprejudiced mind, but that it is likewise a powerful influence for evil can not be disclaimed even by those who advocate most earnestly its legitimate and intelligent employment. Apart from the effects of

acute intoxication the deleterious influence of long-continued indulgence in alcohol is witnessed in chronic visceral changes principally of a degenerative character. In speaking of the increase in the number of cases admitted during the year 1900, to the Royal Edinburgh Asylum, the physician-superintendent, Dr. Clouston, in his annual report was unable to avoid the conclusion that this was due to a large extent to the excessive use of alcoholic stimulants during times of prosperity, attended with brisk trade and high wages. The number of alcoholic insane admitted to the Asylum has increased from an average of 15.5 per cent. in the period between 1874 and 1888 to 21.5 per cent. in the period between 1889 and 1898, and to 22.5 in 1899. Of 472 new cases received during the year 1900, drink was assigned as either the sole or contributory cause in 115, or about one-quarter of all. In the men alone 81, or about one-half, were alcoholic patients. Besides, for every man in whom excessive drinking causes absolute insanity there are 20 in whom it injures the brain, blunts the moral sense and lessens the capacity for work in varying degree. Dr. Clouston makes an earnest plea for legislative or state means for the diminution of alcoholism. He rightly contends that it is an irrational application of the doctrine of liberty to grant to every man the inalienable right to render himself a burden to others and a source of degradation and danger to the community.

"CHRISTIAN SCIENCE" AND LEGAL CONSENTING CAPACITY.

A Detroit newspaper, *To-Day*, recently published, with some comment, an account of a death from influenza under "Christian Scientist" treatment. This called out an indignant protest from a friend who claimed that, as all had been done that the patient and his family desired, it was, as the widow is quoted as expressing it, "nobody's business." The man had a right to die under "Christian Science" if he wished to, and any comments on it were impertinent in this correspondent's opinion. He admits apparently that there is such a thing as "grippe," for he says "Christian Science" has had to "wrestle" with it. The editor, in reply, congratulates the sectaries on the progress this indicates in their recognition of the existence of such a disease, and says if they will cease advertising their alleged successes, he will keep silence on what he considers their failures. It may perhaps be conceded by some, as it is by him, that if a person of full age and legal consenting capacity chooses to follow "Christian Science," even to death, he has a right to do so, but this involves a possible medicolegal question. Has this faith in the non-existence of disease with its consequences as deduced by its believers such a recognized legal standing as to authorize this kind of passive suicide? If so, we should stand quietly by and see a severed artery bleed a man to death while a "Christian Scientist" applied the present or absent treatment of his sect, provided the sufferer demanded it. This is only an extreme logical application of the idea and is well within the bounds of "Christian Science" claims. On the whole, it seems more than doubtful whether fanatical or fatalistic beliefs can legally justify sins of omission involving human life. Of course, if they are held by a large number of more or less influential individuals, including even judges, it may be difficult to punish or prevent them, but that does not affect the principle.

THE PROPAGATION OF YELLOW FEVER.

In the *Philadelphia Medical Journal* of April 6, Dr. H. R. Carter, of the U. S. Marine-Hospital Service, reviews, with apparent effort at fairness, the objections to the mosquito theory of the propagation of yellow fever. He takes up seriatim what he considers the admitted facts as to the method of infection, noticing at most length those that seem most difficult to reconcile with the Finlay theory. The strongest point he offers against it seems to be the apparent retention of infection in an environment without a chance at reinfection; for example, he cites cases of vessels leaving infected ports and developing yellow fever after lapses of time that preclude the belief in the survival of infected mosquitoes. It is true that their eggs laid above water are capable of germination for long periods, but he thinks that, even were the eggs themselves infected from their parents, it is improbable they could find the proper conditions for their development after such a lapse of time. His recognition of only three possible explanations—1, the prolonged life of the germ-bearing insect beyond the present known limits; 2, the occurrence of unrecognized cases; 3, the survival of infection in their eggs—seems somewhat insufficient. Assuming a parallelism between malarial and yellow fever infection, it is not at all beyond the bounds of belief that there may be a like variability in the duration of the periods of incubation. In fact this is noticed by Finlay in his article in this issue of THE JOURNAL, as an analogy with the malarial infection. The mosquito theory of malaria is practically accepted, and there are many facts of delayed appearance of the disease quite as striking as those occurring in yellow fever. These latter, therefore, do not seem to be as important as evidence against the mosquito infection theory as he seems to think, certainly not if we are to utilize the most obvious analogies. Aside from the omission of this possible view of the case, Dr. Carter's summary of the objections seems very fairly stated. Reed and Carroll's experiments have placed the Finlay theory of the propagation of yellow fever in the position of the most probable working hypothesis in our present knowledge of the disease. It is certainly the most hopeful one as regards our future control of it, and it is to be sincerely hoped that it may be fully confirmed by further bacteriological and clinical studies.

SAN FRANCISCO'S PLAGUE.

We present on another page a comprehensive and authoritative résumé of the bubonic plague conditions that have prevailed in San Francisco, our conclusions having been drawn only after a careful review of the various phases of the question, these latter having been presented in detail through THE JOURNAL, from time to time, from data furnished us by efficient correspondents on the ground. This "Special Article" summarizes the conditions to date, and merits the careful reading of every medical practitioner.

Medical News.

CALIFORNIA.

Dr. Helen **O. Anderson,** Los Angeles, is at the head of a movement to establish a hospital for children in that city.

The **Oakland College of Medicine and Surgery,** incorporated in October last, will be ready to accommodate 500 students in its new building which will be ready for the fall term.

The **California Eye and Ear Hospital,** San Francisco, established four years ago, has outgrown its present quarters and will erect a new $20,000 building. Dr. Tenison Deane is president, and Dr. Redmond W. Payne, secretary.

A serious epidemic of pneumonia recently occurred in Bakersfield, Cal., with more than 200 cases and 80 deaths. There was a suspicion among a few that plague rather than pneumonia should have been the diagnosis, but investigation shows no foundation for such suspicion.

Recording of Certificate Not Essential.—Superior Judge Kerrigan has reversed the decision of the lower court and holds that the defendant, in the case of J. S. Reid vs. A. J. Raisch, must pay the amount sued for with interest from 1897. In the part of the state law which provides for the issuance of a certificate by the State Board, the certificate is declared to be conclusive evidence of the right of the person to whom it is issued to practice in any part of the state. This right is not lost by failure to record the certificate. The provision for having it recorded is in a section of the law apart from the other provision. There is a general provision making a violation of any part of the law a misdemeanor, and Dr. Hopkins might have been prosecuted for not having his certificate recorded, but his right to recover for services would remain good.

DELAWARE.

Dr. **Florence Watson** has been elected assistant superintendent to succeeed Dr. John H. Hammond, resigned, at the State Hospital for the Insane, at Farnhurst.

Smallpox in the State.—Sixteen cases of smallpox have been reported at Concord, 3 at Seaford, 2 at Bethel, 1 near Bridgeville, and 1 near Portsville. On April 4 the State Board of Health of Maryland notified the State Board of Health of Delaware that unless pest-houses were built in Sussex County to care for the cases of smallpox and persons in quarantine persons from this county would not be allowed to cross over into the adjoining counties of Maryland.

GEORGIA.

A health officer was provided for by an ordinance passed by the Atlanta City Council, April 1, despite opposition from the Board of Health.

The University of Georgia Medical Department. Augusta, held its annual commencement exercises April 1, and graduated a class of thirty. Dr. James B. Morgan delivered the doctorate address.

The **Atlanta College of Physicians and Surgeons** held its third annual commencement, April 2. Hon. Dupont Guerry, Macon, delivered the address of the evening and diplomas were given to a class of 67.

The **Atlanta City Council** has voted to refuse to allow Dr. Charles F. Benson $195, and Dr. Thomas D. Longino $190, for services rendered as members of the Board of Health in connection with smallpox cases.

An **electrotherapist** of Atlanta, who declined to comply with the law specifying that before practicing medicine in the state an examination must be passed, and who was on trial for practicing medicine without a license, has been acquitted.

ILLINOIS.

Dr. **A. David Steele,** Chester, has been reappointed physician of Randolph County.

Dr. **Henry P. Beirne,** Quincy, has been elected alderman of the third ward in that city.

Dr. **Samuel E. Munson** has been appointed physician and pathologist to the Springfield Hospital.

An **ambulance** has been presented to the Ryburn Memorial Hospital, Ottawa, by Messrs. James and J. D. Oliver, South Bend, Ind.

Chicago.

The **College of Medicine and Surgery** has increased its capital stock from $10.000 to $50,000.

Dr. **Hezadiah Todd Crabtree** has gone to San Francisco to become house physician of the Children's Hospital.

Dr. **Ellon S. Smith,** Southwick, Mo., who had never been vaccinated, was taken to the Isolation Hospital, April 5, suffering from smallpox.

Dr. **Mary H. Thompson's memory** is to be perpetuated by a marble bust to be made by Daniel Chester French, the sculptor, and to be placed in the Art Institute.

Mortality of Chicago.—For the week ended April 6, the mortality was at the rate of 13.37 per 1000 per annum, which compares favorably with that of the corresponding week of last year, which was 17.56. Of the 451 deaths, 70 were from pneumonia, 55 from consumption, and 35 from violence. While there were 22 more deaths reported to the health department last week than the week previous, the total number was 121 fewer than for the first week in April, 1900. The record of exceptionally low mortality has now continued unbroken for eleven weeks, during which period there have been 933 fewer deaths than during the corresponding period last year. Only the mortality from such chronic maladies as nephritis, and diseases of the nervous system shows any material increase; while, on the other hand, deaths among the aged, those over 60 years, are but about one-half the number recorded a year ago—77 against 140. Similarly as to infant and child mortality, the total deaths among those under 5 years of age were 117 last week, 127 the week previous and 134 last year. Public health conditions, as indicated by the mortality figures, were never more satisfactory than at present.

INDIANA.

A quarantine has been established at Freelandville, Knox County, by Dr. Lyman M. Beckes, Vincennes County health officer, on account of smallpox.

Dr. **George F. Edenharter,** superintendent of the Central Hospital for the Insane, Indianapolis, has been re-elected for a third term of four years, by the trustees of the institution.

Smallpox in March.—The State Board of Health reports, for March, 472 cases of smallpox with 3 deaths. It is estimated that 200 of the cases were in Switzerland County; 100 in Lawrence County and 75 in Ohio County.

Osteopaths are asking for license to practice in the state. At the meeting of the Board of Medical Registration and Examination, April 3, at Indianapolis, 25 applications to practice under the new law were received. This law provides that graduates of regularly established osteopathic colleges are entitled to practice their profession, providing they administer no medicine.

IOWA.

Iowa University College of Medicine, Iowa City, held its thirty-first annual commencement on April 4. Hon. A. B. Cummins, Des Moines, delivered the annual address, and a class of thirty-six received diplomas.

Measures against smallpox at Waterloo have been taken by the State Board of Health, which issued an order on April 3 closing schools, the opera house, forbidding the holding of public meetings and requiring general vaccination.

KANSAS.

Stormont Hospital, Topeka, is being rebuilt.

The Smallpox Situation.—Dr. W. B. Swan, secretary of the State Board of Health, reports a decrease of smallpox in the southern part of the state, but in the northern part it is increasing. During March there were 1336 cases, with a mortality of eight. Smallpox has broken out at the Topeka Insane Asylum, and a number of the attendants have resigned. An isolation hospital has been established on the grounds and at present there are three cases. Smallpox is still prevalent in Topeka. Eight new cases were reported April 6. The disease has been prevalent all the winter in Pleasant Valley township, Saline County. There have been about 40 mild cases with no deaths.

KENTUCKY.

Dr. **Hugh Edward Prather,** as the result of competitive examination, has been appointed interne at the Louisville City Hospital.

Commencement exercises of the Medical Department of the University of Louisville were held March 28, and a class of thirty-five graduated. On the previous day twenty-eight were graduated from the Louisville Medical College.

Quarantine against Tennessee has been proclaimed by the State Board of Health, with a view to stamping out the smallpox which now exists in the border counties and which, it is

claimed, is directly attributable to the unrestrained ingress of negroes from Tennessee.

Dr. Reynolds to Resign.—As a result of serious difficulties in the faculty of the Hospital College of Medicine, Louisville, Dr. Dudley S. Reynolds, professor of diseases of the eye, ear, nose and throat and of medical jurisprudence, will in all probability shortly retire from the faculty. Professor Reynolds is chairman of the judicial council of the Association of American Medical Colleges, and his term as a member of the council expires at the next meeting.

MICHIGAN.

A summer course at the University of Michigan medical department is now under discussion by the faculty.

Mercy Hospital, better known as Emergency Hospital, Iron Mountain, has been closed by order of the bishop of the diocese.

Health in Michigan.—The report of the secretary of the State Board of Health, based on the sickness statistics, shows that in March, 1901, compared with the average in the ten years preceding, scarlet fever, typhoid fever and smallpox were more than usually prevalent; and consumption, intermittent fever, remittent fever, measles, whooping-cough, cerebrospinal meningitis and diphtheria less than usually prevalent.

Dangerous Laws.—The secretary of the State Board of Health, Dr. Henry B. Baker, has petitioned the legislature against the passage of two bills introduced, and recommended by the committee on public health. The first of these proposes to place the entire responsibility for the proper preparation for transportation of "every dead body," including those infected with dangerous diseases, in the hands of the registrars of deaths, who are usually the clerks of cities, villages and townships, and who, as a class, can not be supposed to know one disease from another, nor how to disinfect any dead body. He says that if this bill becomes a law, the interests of no locality can be guarded against this mode of introduction of disease, by any official, not even by a registrar of the locality directly interested; but every locality is then to be at the mercy of any non-professional registrar "at the point of shipment" in any other part of the state, and wholly irresponsible in the locality most interested. The present law places the responsibility for the introduction of corpses infected with dangerous diseases with the health officials of the locality endangered thereby, which is certainly the correct principle. The second bill proposes to amend the law so that corpses infected with dangerous diseases may be sent into any township, city or village in Michigan without the permit of any officer of that township, city or village, and without the permit of any health officer of that place, provided only that "said corpse is accompanied by a removal permit duly issued by the register of deaths at the point of shipment." Dr. Baker understands that this bill is instigated by an undertaker who wants to take or send corpses infected with dangerous diseases into localities without taking the trouble to obtain permission of the health officers of the places to which the infected bodies are sent.

LOUISIANA.

The State Board of Health has appointed Drs. H. L. Ballome, D. C. Anderson and T. B. L. Layton marine inspectors.

Charity Hospital Visiting Staff.—At the monthly meeting of the board of administrators, Charity Hospital, April 1, the following visiting staff was appointed to serve during the ensuing six months: Visiting physicians—Drs. W. W. Butterworth, L. G. LeBeuf, A. Nelken, A. Weber, J. M. Soniat, N. Thiberge, J. Laurans, W. H. Seeman, J. A. Storck, P. E. Archinard, E. M. Dupaquier, I. I. Lemann, O. Lerch, G. K. Logan, J. Barnett, J. M. Elliot, C. H. Tebault, Jr., G. S. Bel, G. F. Patton, C. N. Chavigny, L. L. Cazenavette, T. S. Kennedy, E. W. Huhner, and F. Loeber, Jr. Visiting surgeons—Drs. P. Michinard, J. Lazard, J. L. Burthe, J. F. Oechsner, J. B. Guthrie, H. S. Cochram, H. P. Jones, A. S. Yenni, E. H. Walet, C. L. Horton, E. D. Martin, W. M. Perkins, L. Thibaut, S. P. Delaup, J. B. Elliott, Jr., M. H. McGuire, C. J. Miller, S. M. D. Clark, W. E. Parker, E. L. McGehee, H. B. Gessner, M. Souchon, L. Perilliatt, F. W. Parham, F. A. Larue, E. Moss, C. Chasaignac, P. Gelpi and C. A. Borey. Visiting aurists, rhinologists and laryngologists—Drs. E. W. Jones, O. Joachim and J. P. O'Kelley. Visiting oculists—Drs. P. Reiss, E. W. Jones and E. Jowers. Visiting dermatologists—Drs. I. Dyer, R. Hopkins. At the same meeting a bid of $41,864 for the erection of the Nurses' Home was accepted. This does not include the putting in of washstands, for which a special contract will be made.

MARYLAND.

Baltimore.

Dr. Louis McLane Tiffany is convalescing from an attack of appendicitis.

The building fund of the Maryland University Hospital has been increased nearly $1000, by the concert given March 23.

Maryland Medical College has bought, for $14,000, two buildings which it proposes to convert into a hospital as the present one is inadequate to the needs of the institution. The remodeling of the buildings will involve an expense of about $5000.

Tuberculosis Map.—Assistant Health Commissioner C. Hampson Jones has completed the first tabulated tuberculosis map ever compiled here. It will be distributed among physicians. It shows that there were 1151 deaths last year from tuberculosis of the lungs and larynx; 781 were white, 370 colored, and 1 a Chinaman. The deaths between 20 and 40 years of age were more than half of the total. The death of 142 between 5 and 20—the school age—suggests a far greater number of school children infected. The leading occupations were: housewives, 192; laborers, 114; servants, 63; clerks, 63; merchants, 23; saloonkeepers, 17; drivers, 16; waiters, 16; school children, 16; tailors, 15; sailors, 14; painters, 13; laundresses, 12; carpenters, 10; seamstresses and school teachers, each 9. Typhoid and diphtheria maps are also being prepared. In addition to giving the number of deaths, the age and occupation, they will show the exact location in the city where each death occurred and where the diseases are most prevalent.

MISSOURI.

Barton County has 118 cases of smallpox, 67 of which are at Vernon.

Columbia Medical College, Kansas City, elected the following officers, April 1: Dr. Winn F. Morrow, president; Dr. Philip C. Palmer, vice-president; Dr. A. F. Jones, secretary; Dr. James E. Moses, treasurer, and Dr. John L. Robinson, dean.

University Medical College, Kansas City, elected the following officers, at the annual meeting of the trustees, April 3: Dr. James E. Logan, president; Dr. Samuel C. James, dean; Dr. Jabez N. Jackson, secretary; Dr. Albert H. Cordier, treasurer, and Dr. John Punton, curator.

The annual banquet and conferring of degrees, the last event in the history of Beaumont Hospital Medical College, St. Louis, before its consolidation with the Marion-Sims Medical College, was held March 27. Dr. M. Goldstein delivered the annual address and Dr. Frank J. Lutz, dean of the college, presented diplomas to a graduating class of 48.

NEW JERSEY.

Dr. George B. Philhower has been re-elected president of the Franklin Board of Health, a position which he has held for sixteen years.

Orange Memorial Hospital has appointed Drs. William B. Brooks and G. A. Holdredge, both graduates of Bellevue Hospital Medical College, members of its house staff.

NEW YORK.

The Board of Health of Kingston has ordered all day and Sabbath schools closed on account of the rapid increase of scarlet fever.

The "Christian Science" bill, known as "the Bell bill," has been recommitted to the Committee on Public Health. Assemblyman Henry, chairman of this committee, very pertinently remarked that the "Christian Scientists" had had a great deal to say about the efficacy of prayer, and of the wonderful cures they could effect by absent treatment, but for reasons best known to themselves they had not tried that kind of treatment on the legislature, but had done all their praying in the lobby or assembly chamber.

Incorporation of Inebriates' Home.—A bill has been introduced to incorporate the Inebriates' Home of New York City. It is to be empowered to receive and retain inebriates under rules provided by the State Board of Charities for periods varying from six months to a year. The city is to provide for the maintenance of the home. It is contemplated that those who are unable to pay will be treated free. Drs. William T. Jenkins, A Campbell White and I. N. Love are said to be among the trustees.

Gift to Loomis Sanatorium.—Mr. J. Pierpont Morgan, before sailing for Europe, purchased the plant of the Liberty Electric Light and Power Company for about $40,000, and pre-

sented it to the Loomis Sanatorium for Consumptives. The sanatorium uses about 600 lights, and the village of Liberty about 700. This gift will not only enable the sanatorium to secure its lighting at small expense, but the plant will be a source of a steady income. Mr. Morgan had previously presented to the institution its administration building at a cost of $80,000.

Regulation of Hypnotism.—The senate committee on public health has reported a substitute for the bill of Senator McCabe to regulate the practice and teaching of hypnotism, mesmerism, suggestive therapeutics and other kindred sciences. The substitute relates only to hypnotism and mesmerism, and provides that any person who practices such, is not a duly licensed physician or graduate from some educational institution for the teaching of such sciences duly licensed by the regents of the state, shall be deemed guilty of a misdemeanor.

Abolition of Coroners.—A bill has been introduced into the assembly, by Dr. Nelson H. Henry, of New York City, to abolish coroners, a reform which was contemplated by the Constitutional Convention some years ago, but which has not yet been effected. It is contended that the present coroner system is antiquated and inefficient, involving as it does two functions which are naturally distinct; namely, ascertaining the cause of death, and determining whether or not a crime has been committed. The bill seeks to have the second function referred to the police, and the first, which is purely medical, vested—as in Massachusetts—in a medical examiner of experience and standing. Incidentally the proposed change would effect an annual saving of upwards of $100,000.

Buffalo.

The University of Buffalo Medical Department will hold its commencement exercises April 27. There are about fifty in the graduating class.

Dinner to Dr. Bissell.—Dr. William G. Bissell, bacteriologist of the health department, has recently conducted a course of lectures and laboratory instruction for graduates in medicine and dentistry, at the University of Buffalo. The members of this class, including many of the prominent physicians of Buffalo, extended to Dr. Bissell a complimentary dinner April 10. Dr. A. H. Briggs and J. H. Thompson of this city, and Dr. Walter Scott, former health officer of Niagara Falls, had the dinner in charge. Dr. Briggs acted as toastmaster.

New York City.

Dr. C. C. Fite, general manager of the Malt-Diastase Company, has resigned, to take effect May 1.

Dr. James T. Burdick, of Brooklyn, has gone to Bath to assume charge of the hospital of the State Soldiers' Home at that place.

Anti-Expectoration Crusade.—An official crusade against persons who expectorate in public conveyances and on the floors of public buildings was recently begun by John B. Sexton, president of the board of health. By Mr. Sexton's orders 180 policemen from the sanitary squad were detailed in plain clothes to ride up and down and across town in each of the five boroughs, to detect and take into custody any one expectorating in the cars. Nineteen arrests were made, and of this number only one offender was discharged. The others were held on from $100 to $500 bail for examination, were fined and discharged, or were paroled for examination.

Dr. Jacobi's Semi-Centennial.—On the evening of April 5, at the invitation of Dr. Abraham Jacobi, nearly a hundred of his friends gathered at the New York Academy of Medicine to help him celebrate the semicentennial anniversary of his graduation in medicine. He was graduated from the University of Bonn, Germany, in 1851. Dr. Jacobi was formally introduced by the president of the academy, Dr. Robert F. Weir. He then read a paper entitled "German Text-Books Half a Century Ago: History and Reminiscences." Most of the text-books to which he referred were volumes bearing many annotations in Dr. Jacobi's handwriting, and as they were piled up before him they made an interesting collection. They have been presented to the library of the academy. At the close of the address, a collation was served, and Dr. Jacobi received the congratulations of his many personal friends.

Special Courses.—The New York School of Clinical Medicine is giving, on Friday evenings, to June 7, lectures, including the following topics: "Examination of the Male Urethra by the General Practitioner: Clinical Demonstrations," by Dr. Ferd. C. Valentine; "Medical Questions of the Responsibility of Alcoholics, Opium and other Drug Takers," by Dr. Thomas D. Crothers, Hartford, Conn.; "Complicated Fractures: Diagnosis and Surgical Treatment of Prolapsed Kidney: With Clinical Demonstrations," by Dr. Augustin H. Goelet; "Treatment of Strangulated Hernia," by Dr. Carl E. Pfister; "Pelvic Trilogy in the Diagnosis of Diseases of Women," by Dr. A. Ernest Gallant; "The Technics of Major and Minor Amputations," by Dr. Robert H. Cowan; "Treatment of Obesity," by Dr. Heinrich Stern; "Diseases of the Stomach: Practical Examinations and Treatment. Demonstrations on Patients," by Dr. Freeman F. Ward, and "Psoriasis and Acne. Effective and Practical Methods of Treatment: Clinical Demonstrations," by Dr. W. R. Inge Dalton.

NORTH CAROLINA.

Dr. Richard H. Lewis, Raleigh, secretary of the State Board of Health, has appeared before the house judiciary committee to protest against the passage of the bill introduced to repeal that section of the law of 1899 requiring a three years' course in medical colleges. The committee reported unfavorably on the bill.

County Sanitary Committee.—Under the new law Dr. Thomas S. Burbank, Wilmington, has been appointed a member of the committee from that city, and Dr. Lionel H. Love, Wilmington, as representative for New Hanover County. These gentlemen, together with the county commissioners, constitute the committee and are required to meet May 6 and elect a county superintendent of health to serve two years.

OHIO.

Cincinnati.

Dr. Christian R. Holmes has been elected president of the Cincinnati Society of Natural History, and Dr. Arch I. Carson, secretary.

New internes at the German Deaconess hospital are Drs. Byron Sharkey and J. C. McGinnis, of Miami Medical College, Drs. Gustav Haeusser and George A. Buttermiller of the Ohio Medical College are alternates.

Tetanus.—Jacob Tiller, motorman of one of the traction cars, who was struck by a railroad train at a crossing, has died of tetanus. This is the fourth man within a few years wounded and dragged along the cinders of this tract who has died of tetanus. It is significant to note in this connection that every day numerous stock trains going to and from the stockyards pass over these rails.

OREGON.

The University of Oregon medical department, Portland, conferred degrees on a class of eleven April 1. The address to the graduates was delivered by W. D. Fenton.

A bill introduced by Senator Josephi, to establish state and county boards of health, and to provide for quarantine restrictions between counties, has passed the senate.

Health Commissioner Menefee claims that Portland is the healthiest large city in the United States, its mortality for 1900 having been at the rate of 10.05 per 1000.

Williamette University Medical College, Salem, held its annual commencement exercises April 3. Hon. William Kuykendall delivered the charge to the class, and president Willis C. Hawley conferred degrees on a class of five.

PENNSYLVANIA.

The Chester Board of Health, recently reorganized, elected Dr. S. V. Hoopman president, and Frank Innis vice-president.

Reorganization of State Medical Council.—The State Medical Council met for the purpose of reorganization, in Harrisburg, April 2, the following named being elected: President, Dr. Henry Beates, Philadelphia; secretary and treasurer, Dr. H. S. McConnell, New Brighton.

Philadelphia.

Samaritan Hospital has received $2500 through the will of Mr. George Widener, recently deceased.

Mount Sinai Hospital is to be given a benefit ball, April 13, by the Jewish friends of the institution. The proceeds will be added to the building fund.

Dr. Frederick A. Packard has been elected a member of the board of trustees of the University of Pennsylvania, to fill the vacancy caused by the death of Dr. J. M. Da Costa. Dr. Packard was graduated from the college department in 1882, and from the medical department three years later, at which time he won the Beates prize for the highest general average in final examinations.

The Committee on Approprlations, of the state legislature, visited Jefferson Medical College Hospital, April 1. The trustees have asked for an appropriation of $300,000 for the

purpose of increasing the facilities of the hospital. The properties between the present institution and the old college building have been acquired and a new maternity building will be erected on this site.

Presentation of Dr. Keen's Portrait.—The presentation of the portrait of Dr. W. W. Keen, by 750 members of the different classes of Jefferson Medical College, to their Alma Mater, occurred in the clinical amphitheater April 4. The presentation speech was made by Dr. J. Chalmers DaCosta, and the address of acceptance by William Potter, president of the board of trustees. The portrait will be hung in the trustees' room in the new college building. It was painted by William M. Chase, of Philadelphia, and is nearly full length in size. It represents Dr. Keen wearing the robes of a Fellow of the Royal College of Surgeons.

Dr. Thomas Bond's Grave Found.—After a period of 108 years, the grave of Dr. Thomas Bond, Jr., of Philadelphia, has been found in the Presbyterian churchyard at Morgantown, W. Va. The brass plate on the coffin bore the inscription: "Hic jacet, Thomas Bond, Jr., of Philadelphia. Died July 17, 1793." Dr. Bond was the son of Dr. Thomas Bond, a well-known surgeon. Having studied medicine under his father he went to the front as a surgeon and was with Washington in the retreat through New Jersey, and was at the battle of Princeton. In 1776 he was made assistant surgeon of the First Troop, Philadelphia City Cavalry. In 1781 the Continental Congress appointed him medical purveyor, a commission which he held until 1793, when he contracted typhoid fever, which caused his death. His ashes will be brought to Philadelphia and interred in the cemetery at Fifth and Arch streets, where his father and uncle are buried.

WISCONSIN.

Z. G. Simmons has decided to present the city of Kenosha with a hospital, which will cost $30,000.

Dr. George W. Koeppel, Milwaukee, has been appointed an interne at the Emergency Hospital, Milwaukee.

Incipient Consumptives will be cared for in a home erected at a cost of $100,000, if Assemblyman Karel's bill is passed.

GENERAL.

Ann Arbor Plague Case.

In regard to the reported case of plague at Ann Arbor the following authoritative statement may be made. The accounts mentioned refer to Mr. C. B. Hare who has been doing special work in the hygienic laboratory for nearly two years. He was considered a very careful and intelligent worker, and after having had a year's experience in ordinary bacteriologic work he was allowed, last July, to cultivate the plague bacillus for the purpose of making Haffkine's vaccin for the firm of Parke, Davis & Co. Since last summer he has been engaged upon this and similar work, and it is probable that he became infected while thus engaged, although he does not know of any accident whereby he might have been infected. It is but proper to state in this connection that Mr. Hare has been the only student who has ever been allowed to work with the plague bacillus in that laboratory. Although medical students in their practical course work with the other well-known pathogenic bacteria, it has never been deemed advisable to trust a culture of the plague bacillus to even ordinary advanced students.

On Wednesday evening, April 3, Mr. Hare complained of numbness and of backache. His temperature rose during the night to 103 F., and he vomited once toward morning. He was seen that night and on Thursday noon by Dr. Spitzley, who made a provisional diagnosis of pleurisy. Thursday afternoon Drs. Vaughan and Novy learned of the condition of Mr. Hare and at once visited his room. The temperature was still at 103, and, although there was no glandular enlargement, it was deemed best as a precautionary measure to inject Yersin's serum; 20 c.c. of this were injected subcutaneously. Swabs made from the throat gave negative results. Shortly afterward he coughed up two or three bits of thick mucus, slightly streaked with blood, and in this material a few suspicious organisms were found. He was at once removed to the isolation hospital and his room closed up and disinfected with formaldehyde. On arrival at the hospital he was given another injection of serum and this was repeated on Friday morning and also in the afternoon. The temperature began to fall and, since Saturday morning, April 6, it has remained below 100 F. The condition of the patient at the end of the sixth day is very favorable. The early recognition of the case has rendered it possible to take every known precaution to prevent the infection spreading. All persons who have been in contact with the patient have received injections of Yersin's serum and rigorous disinfection methods are being carried out.

"Rudolf Virchow Fund."—On October 13, 1901, Rudolf Virchow will be 80 years old. When he completed his seventieth year a fund was started in his honor to enable the great master to facilitate scientific research by establishing scholarships, and by encouraging special medical and biological studies. Contributions to that "Rudolf Virchow Fund" were furnished by those in all countries interested in progressive medicine, as a homage to the man whose name is always certain to arouse admiration and enthusiasm. In Berlin a large committee has been formed to call for contributions which are to be added to the original "Rudolf Virchow Fund" so as to increase its efficiency. The committee expresses the opinion that in no better way, and in none more agreeable to the great leader of modern medicine, can his eightieth birthday be celebrated, and asks for the co-operation of all those engaged in the study and practice of scientific medicine all over the globe. A subcommittee has been formed for the purpose of making the American profession acquainted with the intentions of the Berlin Committee, and urges participation in honoring the very man who has done more, these fifty years, than any other to make medicine a science, and international. Subscriptions should be sent to the subcommittee's secretary—who will receipt therefor—Dr. A. Jacobi, 110 West 34th street, New York City. Other members of this subcommittee are: Drs. Charles A. L. Reed, president of the AMERICAN MEDICAL ASSOCIATION, Henry P. Bowditch, president of the Congress of American Physicians and Surgeons; William K. Welch, Johns Hopkins University, and Robert F. Weir, president of the New York Academy of Medicine.

CANADA.

Dr. Francois Martigny, formerly of Montreal, has been appointed assistant surgeon at the Hospital Peau, Paris.

A metrical association is being formed in Quebec, to further the work of introducing and adopting this system in Canada.

Smallpox has broken out near Halifax, N. S., and one death is reported. A general vaccination of that city began on April 7.

All non-vaccinated pupils in the schools of Kingston, Ont., are being dismissed in response to an ultimatum passed by the Board of Education.

Dr. Harold Thomas, Montreal, who has spent the last year studying in Germany, returns to his native city early in May to commence the practice of his profession.

The National Sanitarium Association has secured a building site about three miles from the center of Toronto, for the erection of a building for advanced cases of consumption.

The Ontario government is considering the advisability of erecting isolation hospitals at several lake ports, such as Collingwood, Sault Ste. Marie, Fort William and Port Arthur.

Dr. Price Brown, Toronto, has returned to the city from Asheville, N. C., and New Orleans, La., where he has been all winter in search of health. Dr. Brown returns much improved.

Queen's medical convocation took place on April 10. A pleasing feature was the presentation of the Dean Fowler scholarship, for which subscriptions are steadily being received.

Dr. J. Stafford, who has been associated with the biological department of Toronto University for the past three years, has been appointed lecturer in zoology at McGill University, Montreal.

Dr. W. C. Laidlaw, who has been connected with the Ontario Asylum service for the past five years, has left for Europe, to take a special course in the hospitals of the old land.

Dr. T. J. W. Burgess, superintendent of the Protestant Hospital for the Insane, Quebec, has been granted three months' leave of absence, which he will spend in the old country, recuperating his health.

The Presbyterian Hospital, Atlin, B. C., is progressing. All the work on the building has been done without charge but there is still a small amount owing for materials. There is no other hospital within many miles of Atlin.

Montreal General Hospital.—During March there were 218 patients admitted to the wards of this institution, and 257 discharged. Twenty deaths occurred. There were 3244 prescriptions and minor operations in the out-door departments.

Counter Prescribing.—Recently several druggists were fined for this in Toronto, and appealed to the sessions. The presiding judge has granted their appeal. The conviction was upset because of an irregularity in the form. Four other cases are now before the police magistrate, who states he will convict and keep on convicting along these lines.

New Medical Organization.—An association of practitioners in medicine and surgery has just been formed in the province of Ontario, under charter issued by the Ontario government, having its headquarters in Toronto. Stock can only be held by medical men, and the association will deal with supplies of all kinds. It has a board of nine directors, representing various sections of the province.

Vaccination Statistics.—The Hamilton Board of Education recently sent out circulars in regard to vaccination and in response thereto have received over 7000 replies. The figures show that about 33 per cent. of children attending the schools have been vaccinated. About 600 notified the Board that they object to vaccination. The Board of Education considered the matter and decided to have all those who did not object vaccinated.

Ontario Provincial Hospitals.—There are between fifty and sixty of these institutions in Ontario, and there has been a great increase in the number of patients during the past year. Two new hospitals, those at Sault Ste. Marie and Parry Sound, have been put on the government pay-roll. The number of patients remaining in the various hospitals on October 31, 1900, was 1893. The number admitted during the past year was 27,061; and the total number of patients under treatment during that time 29,761. The number of deaths during the year was 1451. The revenue from all sources, other than the government grants, was $498,579.17; and the provincial grant for the past year was $110,000. The average cost per patient per day was 83½ cents.

Medical Boards.—The Secretary of State for War having approved of medical boards composed of medical officers of the Canadian militia, being assembled to report upon cases of Canadian militiamen for pensions for services in South Africa, has authorized the following boards to investigate and report upon any such cases: In western Ontario, Surgeon-Major, J. N. Piper, London, and Surgeon-Captain, A. N. Hayes, Sarnia; for Toronto, Surgeon-Major Nattress, Surgeon-Major J. E. Elliott and Surgeon-Major J. T. Fotheringham; for Kingston and the East, Surgeon-Major H. R. Duff, Surgeon-Major R. W. Garrett and Surgeon-Major H. R. Abbott; in Quebec, Surgeon-Major J. G. Roy, Surgeon-Major C. W. Wilson and Dr. J. M. Elder, Second Regiment C. A., Montreal.

McGill Medical Faculty Changes.—An important change will come into effect in the Faculty of Medicine of McGill University in September, 1902, which will be an increase in the requirements for medical matriculation. At present McGill has as hard an examination as any of the medical faculties in Canada, but after the date specified, candidates will be required to pass in English, mathematics, and either French, German, Greek, chemistry or physics. They will all be required to show a practical knowledge of chemistry and a sound acquaintance with physics, statics and dynamics. The only optional subjects after that date will be French, German or Greek, of which one will have to be taken. Dr. Ruttan, registrar of the faculty of medicine, states that they want to make McGill the best medical school in the world. Some time ago the course was extended from six to nine months; and more recently a combined arts and medical course was introduced.

Cremation in Quebec.—Some months ago Sir William Macdonald, of Montreal, offered to bear the expense of a crematory if the Mount Royal Cemetery would conduct it thereafter. It was found that for this purpose legislation would be required, so a bill was introduced into the last session of the Quebec legislature, and after a somewhat bitter and stormy discussion on its merits it became a law. The strongest opposition came from the Roman Catholics, but it was pointed out that the purposes of the measure were not to seek power to cremate Catholics but for the erection of a crematory in a Protestant cemetery, at the request of protestants; and even then the legislation would not be compulsory. This law reads: "That the deceased at the time of his death is entitled to be buried in Mount Royal Cemetery and has expressed by his will a wish that his body be cremated." This is the first instance of the principle of cremation becoming law and a legal process in the Dominion of Canada.

Medical Service Legislations.—There is a bill now before the imperial parliament, so the Canadian Militia Department has been advised, which will open the door to Canadian doctors who may wish to enter either the imperial, naval, military or civil services. The measures will apply to medical men in all British colonies; and provides that where the examinations and courses of study at the leading colonial schools of medicine are in all respects equal to those of the United Kingdom, and subject to the supervision of the General Medical Council, that the medical men from Canada and other colonies of Great Britain may be permitted to serve the empire in these aforesaid services. This measure is said to be the outcome of the South African war, for which several Canadian surgeons of the highest repute offered their services, but they had to be refused owing to the medical law of England, and even a field hospital from Canada had to be declined for the same reason. It is presumed that after the passage of this act the medical schools of Canada will require to have imperial approval of their examinations and courses of study, providing they wish that their graduates be accorded these privileges in the naval, military and civil services of the British Empire.

LONDON LETTER.

The Struggle Between the Board and Staff of the National Hospital for the Paralyzed and Epileptic.

This controversy, referred to last week (p. 976), at last seems to be approaching a satisfactory termination. The Board, or rather the "secretary-director," who has practically taken the control of the hospital into his own hands, has received a decided check. A special meeting of the governors and subscribers has been held to consider the question of holding an independent inquiry into the allegations of the medical staff as to the diet and condition of the patients, and the administration of the hospital, as a condition precedent to any reconsideration of the demand of the staff for direct representation on the Board, and also to lay down the conditions essential to such inquiry. The Lord Chancellor, who presided, said that the situation was most injurious to the hospital. One of the Board moved a resolution that an inquiry into the accuracy of the allegations of the staff ought to precede the reconsideration of the demand for representation. As an amendment it was then moved "That a full and independent inquiry be at once instituted by the governors into the statement of the medical staff, the facility of communication between the staff and Board, the demand for representation, the position, functions and acts of the secretary-director, and the constitution, rules and management of the hospital generally. The Board so far capitulated by accepting this amendment, which was therefore adopted unanimously. It was finally agreed that the committee of inquiry should consist of at least one physician or surgeon, one eminent lawyer, one business man and one other person, none of them being governors or members of the staff of the hospital. The nomination of this committee and other preliminary arrangements were entrusted to a committee including Sir John Paget, Mr. Jonathan Hutchinson and others.

The British Congress on Tuberculosis.

A preliminary program of this Congress, which will be held in London from July 22 to 26, has been issued:

Section I. State and Municipal.—In this section the following questions will be discussed: *Division I. Statistical.*—What conclusions may be drawn from statistics as to the connection between the mortality from phthisis and the condition contributing to it. In this connection regard will be had to the following points: 1, mortality during the late Queen's reign; 2, geographical distribution; 3, incidence of mortality in particular occupations; 4, age and sex distribution; 5, distribution in several sanitary areas of London; 6, heredity; 7, tabes mesenterica and milk-supply; 8, phthisis and soil; 9, indications for future research. *Divisions II and III. Notification.*—How can voluntary notification of advanced tuberculosis be best encouraged and effected? What is the experience of compulsory notification in New York, Buffalo and Washington? *Influence of Housing and Aggregation*: 1. How can a higher standard be attained of personal cleanliness, and of cleanliness of houses invaded with phthisis? How far are additional lighting and ventilation necessary to ensure a higher standard of bacteriologic cleanliness? How may cleanliness and sufficiency of light and air be secured in factories and workshops, ships, railway carriages, etc. *Division IV. Control of Milk and Meat.*—What changes are requisite for improving cowsheds and health and cleanliness in milch cows? What is the value of the tuberculin test? How may it be used to eradicate tuberculosis? What advantages in the prevention of tuberculosis are secured by sterilized milk, pasteurized milk, and milk obtained from herds free from tuberculosis and kept cool from the time of milking to reaching the consumer? How is the sale of tuberculous meat to be prevented? *Division*

V. Sanatoria.—What are the best means of promoting the erection of sanatoria for phthisical patients in which: 1, the curable may have the best chances of recovery; 2, the incurable may have their lives prolonged and cease to be a source of danger to the community. Among those who are expected to take part in this section are Dr. Herman Biggs, of New York City, and M. Mound, director of the French Public Health Service.

Section II. Medical.—Drs. Theodore Williams and Burney Yeo will open a discussion on :"What Influence Has Climate on the Treatment of Consumption and How Far can Cases be Grouped for Treatment in Certain Climates?" There will be a discussion on the "Therapeutic and Diagnostic Value of Tuberculosis," in which Koch is expected to take part.

Section III. Pathological.—A discussion on the "Morphological and Physiological Variations of the Bacillus Tuberculosis and Its Relations to Other Acid-fast Bacilli to the Ray-Fungus and to Other Streptothrices," will be opened by Dr. Moeller, of Berlin. A discussion on the "Tissue Changes and Constitutional Effects of the Various Constituents of Tuberculin" will be opened by Koch. Another on the "Varieties of Tuberculosis," will be opened by Professor Benda, of Berlin, Délépine, of Manchester, and Hamilton, of Aberdeen. There will also be a discussion on "Mixed Infection in Tuberculosis." Dr. Roux and Professor Metchnikoff, of Paris, are expected to take part in the work of this section.

Section IV. Veterinary.—The subjects are diagnosis of tuberculosis in animals, milk and meat supply.

Museum.—There will be a temporary museum illustrating the pathology, treatment and prevention of tuberculosis. It will consist of: 1, pathologic and bacteriologic preparations and specimens illustrating tuberculosis in man and animals; 2, plans and models of hospitals and sanatoria, and charts and documents bearing on the historical, geographical and statistical aspects of the subject.

The Open-Air Treatment of Tuberculosis.

Good results of the open-air treatment of consumption were narrated at the annual meeting of the Manchester Consumption Hospital. Of 141 patients, 121 were discharged improved, 6 remained stationary, and 14 became worse. There was an average gain of 9 lbs. in weight in the patients. The results compare favorably with those of continental public sanatoria from which percentages of 60 to 70 of cures are reported, against the Manchester's 85. The hospital is situated eight miles from the center of Manchester, in the Cheshire village of Bowdon.

The Epidemic of Arsenical Poisoning.

The following finding of the coroner's jury in a case of death from arsenical poisoning in Liverpool fairly apportions the blame: Bostocks' directors (the sugar manufacturers who supplied the whole of the contaminated sugar which caused the epidemic) are not culpably negligent, but to blame for not notifying that the acid was required for food purposes; Nicholson (sulphuric acid manufacturer, who supplied Bostocks with sulphuric acid contaminated with arsenic, which was used in converting starch into sugar) are not culpably liable, but displayed extreme indifference. Bostocks' chemist is negligent but not culpably so. Messrs. Bostocks have become bankrupt in consequence of the epidemic. The claims made by brewers and others for compensation for supplying impure glucose are sixty-seven in number, and amount to $650,000. On the other hand they have an action against the sulphuric acid manufacturers for $750,000.

Enucleation of the Tonsils.

At the Medical Society of London, Dr. St. Clair Thomson exhibited two cases showing the desirability, in certain cases, of removing the tonsils by enucleation. The first patient was a woman aged 38. In 1894 she noticed cheesy collections in her tonsils, of offensive taste and fetid odor. For this condition she was under continuous treatment three years. During two years she attended Dr. Thomson's clinic and was actively treated with gargles, paints, lozenges, caustics, the galvanocautery and incisions laying open the crypts. She remained unrelieved. Accordingly, two years ago, the tonsils were enucleated under chloroform and the patient was cured. Some regeneration of lymphoid tissue between the pillars of the fauces had taken place. The patient's voice was not in any way injured and was even improved for singing. The second patient was her son, a boy aged 10½ years. At 4 his tonsils were enlarged and were removed. He was not again troubled with them until after scarlet fever at the age of 6 when they were again enlarged and were removed with the guillotine. A few months later cheesy concretions were noticed in the crypts of the tonsils. Since that time they have increased without intermission. He was under treatment from September to December last. The chief complaint was of foul breath. The tonsil stumps were deeply imbedded betwen the faucial pillars. They were riddled with crypts, some of which were one-half inch deep. From these, dirty white fetid cheesy matter was easily extruded. It was impossible to thread these tonsillar stumps into the ring of the guillotine. The tonsils were enucleated under anesthesia, chiefly with a pair of curved scissors and the fingers.

FOREIGN.

The French department of public instruction has officially reaffirmed that the diploma of a technical school does not entitle the holder to admission to the university courses of literature, law or medicine.

Testimonial.—On the occasion of the election of Dr. R. Galvao to the chair of bacteriology at Rio de Janeiro, the *Brazil Médico* gave a luncheon in his honor at the offices of the journal. A superbly bound edition of his work, "Noções de Bacteriologia," with a dedication and the autographs of the guests, was presented to him.

Rumpf's Resignation.—Quite a sensation has been caused in Germany by Professor Rumpf's resignation of his position as director of the great Eppendorfer Hospital at Hamburg, on account of differences with the Oberin or matron of the institution, which were decided by the authorities in favor of the latter. He intends to move to Bonn.

Commemorative Monographs.—Professor von Coler, general staff surgeon to the German army and president of the Prussian Council of Health, celebrated his seventieth birthday recently. His friends, to commemorate the occasion, have collected a number of medical monographs by noted writers, which will be published in turn and known as the Coler Library. Subjects interesting army surgeons are especially numerous in the collection.

Diphtheria in Hospital.—Diphtheria broke out recently at the Paris hospital of la Saltpêtrière, in a ward containing 145 epileptic or idiot children. Twelve cases occurred in two days. These were treated by antidiphtheria serum and 7 to 15 c.c. were injected in every inmate of the ward. Only four new cases developed and all were mild, although the first case was promptly fatal.

Medical Students Abroad.—The statistics of the medical students in France, published by the *Semaine Médicale*, show that the total number is 8078, which includes 881 foreigners. The United States furnishes only 4 in 1901, to 5 in 1900; 1 in 1899; 6 in 1898; 10 in 1897; 14 in 1886. Roumania, Bulgaria and Turkey average over 100, and Russia 333. There are 44 students from Central and South America, 38 from Greece and none from China or Japan. The editorial urges the authorities to allow foreign students the privilege of taking their medical course in Paris, instead of being distributed among the provincial universities to prevent overcrowding. The attractions of Paris, it claims, would bring many more foreigners for the medical course if they were sure they could remain in the capital.

Damages for X-ray.—The Paris lower court has recently condemned a physician to 5000 francs damages and expenses on account of a severe X-ray burn that developed on a patient after three long exposures in the course of three weeks. The *Semaine Méd.* comments that physicians must bear in mind that when they apply these new physical therapeutics they step out of the domain of medicine and pass into the jurisdiction of common law. According to this French decision, a fault or negligence is not necessary—the mere application of physical measures which resulted in injury renders the physician liable to damages. The editorial concludes with the remark that justice, as practiced in the courts, is not partial to the medical corps in these days, and it behooves physicians to be wary.

Progress of the Plague.—For the week ending March 23, 46 cases of plague were admitted to hospital at Cape Town, S. A., and there were 21 deaths, 3 suspects and 394 contacts. According to advices of April 6, it is spreading among Europeans, although in a mild form. Five corpses were found concealed and 12 cases of recent origin were evenly divided between natives and Europeans. The rooms of the Young Women's Christian Association have been closed on account of a case discovered on the premises. This makes the total cases 315, and the deaths 107, including 22 Europeans. In Mauritius, for the week ending March 14, there were 5 new cases and 6 deaths. In Western Australia there are 8 cases of plague in whites—7 adults and 1 child, and 1 among the Chinese.

Government Report of Sydney's Plague.

A government report on the outbreak of plague at Sydney in 1900 has been issued. Between January 19 and August 9

there were 303 cases. Prodromal symptoms were rarely observed. Within a period of from one to twelve hours the patient became severely ill. Rigors, headache, vomiting, flushing of the face, and suffusion of the eyelids were almost constant symptoms, while the temperature ranged from 100 to 102 F. Constipation was the rule, but diarrhea sometimes occurred. In some cases during the early stages the glands were painful. Coma and delirium supervened and lasted to the fifth or sixth day. Improvement then began. On the tenth day, convalescence was initiated and the bubo suppurated. Such was the ordinary course, but in some cases the patients simply complained of feeling ill and died unexpectedly without definite symptoms. The form of the disease was almost exclusively bubonic, but 17 cases were septicemic and one pneumonic. The mortality was 34 per cent. Only 10 of the patients were Chinese, and they showed the high mortality of their race to plague; 8 died. For protective inoculation Haffkine's serum was employed on 10,700 persons, including the members of the various staffs. No illness occurred among the latter, excepting in the case of a scavenger who escaped inoculation. In the inoculated public 13 cases occurred, all of which were slight. Yersin-Roux serum was used in the treatment of 71. It was found to possess antitoxic properties, but was not to be relied on as a curative agent. The disease was not communicable from man to man, and was not conveyed in any important degree by clothing, merchandise or excreta. The infection originated in rats and is presumed to have been conveyed to man by fleas. The best and only defense against epidemic plague is declared to be good sanitation.

Correspondence.

Prof. Osler and the Assistant Surgeon in the Spanish-American War.

LOUISVILLE, KY., March 25, 1901.

To the Editor:—In view of the many adverse criticisms of the diagnostic abilities of the surgeons in charge of the sick during the Spanish-American War, I consider it a duty to show that only an entire misapprehension of the facts could possibly excuse such severe and unjustifiable indictments as exemplified in the following quotation from Dr. Osler's paper on "Medicine in the Nineteenth Century." The quotation, which is only one of many similar in tone, is as follows: "The worst indictment ever brought against the medical schools of this country is contained in a report by Reed, Vaughan and Shakespeare on the prevalence of typhoid fever during the Spanish-American War. Shades of W. W. Gerhard and of Austin Flint! The young doctors to whom we intrusted scores of valuable lives, had practically not gotten beyond the nosology of Rush. Of the total number of 20,000 cases of typhoid fever, only about 50 per cent. were diagnosed by the regimental or hospital surgeons." Then follows a reference to a number of cases, originally recorded as malarial fever, diagnosed as typhoid fever after having been transferred to a civil hospital.

It is easy to take a few cases transferred to a civil hospital, arriving perhaps with hasty diagnoses appended to the transfer slips, and upon careful observation, after a full maturation of the disease, decide that the appended diagnoses were often wrong. But what about those hundreds, indeed thousands, of cases that never reached a civil hospital, that never passed under the keen and careful observation of the great diagnosticians, cases that ran as a rule an atypical course with a lower mortality rate than was reasonable to expect in typhoid fever under camp conditions. Was the element of doubt not sufficient to deter the prudent surgeon from immediately condemning them to the strict regime of undoubted typhoid cases, by putting them at once in that class? Have these critics considered the conditions which made the careful and extended observation of these cases quite impossible?

I submit the following as a summary of the conditions under which we labored; this may enlighten our critics sufficiently to show that our work was, on the whole, as accurate as the conditions permitted. 1. The medical officer—I refer to the volunteer and contract surgeon—in the unfamiliar environments of a large military camp, overwhelmed with a constantly augmented mass of routine work only indirectly concerning the sick, found that the time available for the actual observation of his cases was quite inadequate for satisfactory work.

2. Cases were transferred without history charts, or at best with incomplete and comparatively valueless records. That it was practically impossible to correct this evil is explained by the condition of the hospital corps. In the handling of a large number of cases a doctor requires the assistance of intelligent attendants; yet we found ourselves with a hospital corps, deficient at best, disorganized by sickness and overwork and soon replaced with detachments of men, few of whom had ever seen a clinical thermometer, and who, because of general unfamiliarity with hospital work, demanded the constant attention of the surgeon to prevent their being an absolute menace instead of a meager help. This will explain the confusion of records and neglect of case histories.

3. The surgeon, without reliable histories, did not often remain long enough in charge of a given group of cases to be enabled to make careful personal observations to determine the accurate diagnosis. This was due to the continual redistribution, made necessary by the increasing sick-rate among the troops and the sick leaves granted surgeons themselves, resulting in the constant movement of a large number of junior medical officers to close up, as well as possible, the ever-recurring hiatuses in the service. These officers became often, in fact, medical nomads. In addition to this, there was a necessity of frequent redistribution of the patients on account of overcrowding, the movement of camps, commands, etc. This greatly increased the difficulty of making continued and competent observations.

4. The method of administration of medicines must not be overlooked. Obviously, to facilitate transportation and administration, most drugs were provided in tablet form; many of these tablets proved to be quite insoluble, and from personal observation I am sure that two-thirds of the quinin thus administered could have been recovered unchanged from the stools. Until the general attention was directed to this fact, it is not inconceivable that many atypical cases of typhoid fever were classed with cases of undoubted malarial origin which refused to respond to the administration of quinin; the insolubility of the tablets not being generally known rendering this important test negative.

5. Prodromal symptoms were not to be relied on in the face of the epidemic of "camp-malaise," which may be described as a varying combination of the following symptoms: pains in the back, abdomen and limbs—headaches, diarrheas, and gastric disturbances—physical and mental depressions; with temperature incidental to these symptoms and the frequent complications of acute venereal diseases. The surgeon found it difficult, indeed often impossible, to determine whether or not this train of symptoms was to denote the invasion of typhoid fever or was the result of the enervating camp work, drills, etc.—the penalty for absolute neglect of the simplest requirements of personal hygiene, or for the frequent intemperance in food and drink obtained outside of camp, or, perchance, an expression of the invincible combination of all these forces of morbidity.

6. Besides this train of functional disturbances, obscuring the prodromal symptoms of enteric fever, there existed the graver conditions of aggravated diarrheas and other severe intestinal disorders, combined with fevers of malarial or other origin, which often simulated the various stages of typhoid fever and gave clinical pictures, so anomalous that it became a matter of extreme difficulty to separate the real from the pseudotyphoid cases.

7. Another consideration of importance, though not directly concerning the subject in controversy, is the effect a sweeping diagnosis of typhoid fever would have had on the people in the home states. Every one officially interested was sufficiently aware of the alarming prevalence of this great camp disease to be alive to the necessity of taking every precaution of camp hygiene to check its progress. But a wholesale verdict of typhoid fever would have only served to increase the panic that took possession of those people who thought that there should be no mortality in an army save that inflicted by the bullets of the enemy; and in consequence we would have had

more examples of the deplorable interference due to public hysteria and misdirected sentiment, exemplified by the sending of special trains to convey the sick many hundreds of miles to civil hospitals. Certainly these cases stood a better chance of recovery, left quietly in any field-hospital, than after transportation on long journeys in ill-ventilated and ill-equipped trains with the attendant excitement and shock of removal to and from cars, ambulances, etc.

8. To leave the consideration of those unfortunate, though unavoidable, conditions which are so closely associated with all large military camps in time of war, and in which it is made clear that a careful and scientific study of any but selected cases was quite out of the question, I wish to refer again to the general peculiarities of camp fevers. Personal observation has convinced me that diseases, developing under such unusual conditions and environments, will rarely present the clinical picture seen in the disease in private practice. This may be explained by the marked physical and psychic modifications induced in the patient before the invasion of actual disease, by the changed conditions of nutrition, habitat and activity. These have certainly a strong influence on the metabolic mechanism of the body, producing in those patients observing hygienic precautions and suited for the radical change, a beneficial influence, enhancing vitality and resisting power and modifying favorably the disease; in others, neglectful of hygiene and unsuited for the radical change, assisting the evolution of the gravest and most complicated types. Perhaps this will explain the difference of mortality in the Civil War between the so-called "typhomalarial" fever—about 7 per cent. and the cases classed as typhoid (about 39 per cent.). I venture to suggest that, in the nimble plasmodium of Laveran and the ubiquitous bacillus of Eberth, it is possible we may not have the only bacterial agents capable of producing the symptoms so universally associated with paludal and enteric fevers; although it is undeniable that an enhanced tissue resistance or an attenuation of the specific organism of a disease may adequately account for the striking modifications of a large series of cases originating in military or other camps, and resulting in a great and uniformly reduced mortality.

It was therefore my opinion, and that of most surgeons, that a large number of cases recorded as malarial fever were really typhoid fever of a modified form; they were what the older doctors—those dominated by the nosology of the Civil War—would have called "typhomalarial fever" inasmuch as they failed to conform clinically to either typical typhoid or typical malarial fever, but maintained a middle ground with a low rate of mortality. Bacteriologic investigation in the field was practically out of the question. We refused, therefore, to perpetuate that unjustifiable term "typhomalarial," and used the term "malarial" in filling out the morning sick reports, rarely changing the diagnosis thus recorded unless undoubted symptoms proved this in error. We were justified in this as it was easy enough to point to a group of cases and say, "These are probably modified typhoid cases," yet for the reasons enumerated it would have been practically impossible to say of a single case in such a group, "this is *certainly* typhoid" or "this one is *certainly* a case of malarial fever." Therefore I think it is not to be regretted that we classed such doubtful cases with the malarias and administered antiperiodics, using as far as possible the dietetic precautions observed in typhoid fever, rather than to have classed them with undoubted typhoid cases and withheld quinin or at least a sufficient dosage to have made an impression on the paludal disease. It is to be remembered that most of these camps were in the South and constantly subjected to conditions favorable to the propagation of malarial fevers and the development of grave types.

However, eliminating all consideration of the analogy between these alleged *undiagnosed* cases of typhoid fever and the old Civil War quibble "typhomalarial fever," a consideration of the conditions which I have enumerated will make our work appear highly creditable: especially when we compare our low mortality rate with the best results of private and hospital practice, and more especially with the high rate in the African and other wars. Are not results, after all, the best criterion? Do they not testify that "the young doctors to whom we entrusted scores of valuable lives" fulfilled that trust about as well as their imperial medical majesties—our patronizing critics—could have done? I do not wish to be understood as criticizing the higher officers of the army—every one acquainted with the facts is aware that the obstacles and shortcomings were, in a large measure, not to be forseen; they were the inevitable consequences of organizing and equipping, on short notice, an army so large that the nucleus of trained officers and men, provided by the regular establishment, was but a meager leaven for the vast concourse of volunteers whose experience—when they had any—generally gained in those regimental picnics, called state camps, was entirely inadequate for the serious business of large encampments during actual war. The wonder is that they did so well. The ideal camp provisions that later shaped themselves with a riper experience and ampler opportunity certainly carried with themselves a vindication of the much maligned officers in command of the various departments concerned.

I am writing this for the edification of those doctors who fail to see an inestimable advantage in their opportunities for the extended examination and careful study of their cases, and who seem to have a confused idea of the difference between a modern health resort and a hastily prepared military camp.

ALEXANDER NETTELROTH, M.D.,
Late Acting Assistant Surgeon, U. S. Army.

Original Papers Used for Advertising.

CHICAGO, March 30, 1901.

To the Editor:—I notice in the advertising columns of THE JOURNAL of March 30, an advertisement which states: "Official Figures Reported to the AMERICAN MEDICAL ASSOCIATION by the Chairman of Section on Pediatrics," and then it goes on to give statistics where 6325 cases of diphtheria were treated with the advertiser's antitoxin, with a mortality of only 4.11 per cent., and 859 cases treated with all other American and foreign serums with a mortality of 7.46 per cent. These figures are taken from an article which is furnished to whoever applies to the manufacturer of the antitoxin referred to, and on the inside of the cover it states that "this is presented with the compliments of the author." I wish to ask if it is possible that this article was written as an advertisement for this particular antitoxin? If this is a fact, is it not a prostitution of the position of a chairman of a Section in the AMERICAN MEDICAL ASSOCIATION? Very truly,

ROBERT H. HARVEY, M.D.

Fatalities of Spinal Cocainization.—P. Reclus states that spinal cocainization now has a record of six deaths in Europe. Goilav and Jonnesco, of Bucharest, have each reported a fatality. In the former's case 1.5 cg. of cocain was injected and a leg amputated. Two hours later the temperature rose to 38 and 40 C., pulse 125 and death in twenty hours. Juilliard has also reported a death the second day after an operation for hydrocele and inguinal hernia. The autopsy showed a ruptured aneurysm of the Sylvian artery. The vasoconstriction induced by the cocain may have been a factor in the premature rupture of the aneurysm. Even in Tuffier's case, in which a mitral lesion and acute edema of the lung have been assigned as the cause of death, Reclus queries whether the action of the cocain may not have been a factor in the evolution of the edema. Heumberg has also reported the death of a man of 30 in coma fifteen days after an operation under spinal cocainization. The autopsy disclosed hemorrhage in the cauda equina. In Dumont's case a febrile, tuberculous lad in bad general condition died two days after spinal cocainization, and no direct cause for the death could be discovered at the autopsy unless it were the cocain. This total of six deaths to less than 2000 applications of spinal cocainization, is not an encouraging record, he remarked, in the conclusion of his address to the Paris Académie de Médecine, March 19.

Deaths and Obituaries.

William **R. Hall, M.D.**, major and surgeon, U. S. Army, Jefferson Medical College, Philadelphia, died from osteomyelitis, at Manila, P. I., April 2, after an illness of three weeks, aged 51. He was appointed assistant surgeon in the army in 1875, served in Alaska and the West, was attending surgeon at Washington, D.C., in 1898; chief surgeon at Camp Meade, Pa., and Key West Hospital during the Spanish-American War. He then requested to be assigned to active field duty in the Philippines. In November, 1899, he succeeded Major W. P. Kendall in command of the First reserve hospital in Manila, the largest hospital in the Philippines. During his regime, and largely through his efforts, the hospital was transformed from a huge insanitary and cumbersome institution into one of the best hospitals in the army service. He installed an ice plant, an electric lighting system and a plan of plumbing and drainage.

Edwin C. Baldwin, M.D., University of Maryland, 1844, a member of the AMERICAN MEDICAL ASSOCIATION, for many years a practitioner of Baltimore, some time vice-president of the Maryland Medical and Chirurgical Faculty, and president of the Northeastern Dispensary, died at Dover, N. J., March 25, aged 87.

William Fleet Luckett, M.D., University of Louisville, Ky., 1860, a surgeon in the confederate service during the Civil War, and thereafter a practitioner in Frederick County, Maryland, and since 1885 in Washington, D. C., died at his home in that city, March 30, after an illness of three months, aged 63.

John S. Scofield, M.D., Jefferson Medical College, Philadelphia, 1850, for many years a practitioner in Hillsboro, Texas, a charter member and several times president of Hill County Medical and Surgical Association, died at his residence near Hillsboro, March 23, after a long illness, aged 74.

John Dudgeon, M.D., C.M., Glasgow, Scotland, 1862, died recently at Pekin, China, where he had lived for more than thirty years. He went to China to take charge of the British Legation Hospital at Pekin, and continued in that position for more than twenty years.

Benjamin Franklin Wright Hurdman, M.B., C.M., McGill University, Montreal, 1882; L.R.C.P., L.R.C.S., Edinburgh, Scotland, 1883, formerly a resident of Ottawa, died at his home in Brandon, Manitoba, from pneumonia, March 30.

Joseph S. McCord, M.D., Chicago Medical College, 1872, who practiced for three years after his graduation and then abandoned medicine for the ministry, died at his home in Iowa City, Iowa, March 30, aged 51.

Henry C. Martin, M.D., University of Louisville, Ky., 1882, an early settler of Wichita, Kan., and for many years a practitioner in Harper, Kan., died at his home in that city, March 26, from pneumonia, aged 70.

Alfred S. Spearman, M.D., Jefferson Medical College, Philadelphia, 1852, who had practiced in Milwaukee for nearly half a century, died in Philadelphia, after a surgical operation, April 1, aged 68.

Charles E. Coates, M.D., University of Pennsylvania, Philadelphia, 1850, died at the residence of his son in Abilene, Texas, March 25, suddenly, aged 73. He practiced for many years in Baltimore.

John M. Glasgow, M.D., University of Iowa, Iowa City, 1874, a pioneer physician of South Omaha, Neb., died March 30, from carcinoma of the liver, at St. Joseph's Hospital, Omaha, aged 65.

George **Hayward, M.D.**, Harvard Medical School, 1843, who practiced in Boston until 1875 and then retired on account of ill-health, died at his home in that city, March 30, aged 81 years.

Henry A. Roberts, M.D., Harvard University Medical School, Boston, 1896, died from tuberculosis, at the home of his father in Wakefield Corner, N. H., January 19, aged 32.

E. F. Meacham, M.D., University of Tennessee, Nashville, 1881, who practiced for several years in Nashville, and then retired, died at his home near Nashville, March 24, aged 49.

R. E. Johnson, M.D., aged 35, assistant physician at the State Hospital for the Insane, at Danville, Pa., was stabbed April 3, by an insane patient and died in a few minutes.

James H. Calvin, M.D., University of Wooster, Cleveland, Ohio, 1881, died at his home in Salem, Ohio, March 29, after a long illness caused by a spinal injury in 1892, aged 51.

James R. Nelan, M.D., University of Pennsylvania, Philadelphia, 1877, died suddenly at his residence in East End, Pittsburg, Pa., from heart disease, March 28, aged 50.

James Daton Gallagher, M.D., died April 1, at his home in Steubenville, Ohio, from tuberculosis contracted while an interne at Lakeside Hospital, Cleveland, aged 27.

Henry S. Clemens, M.D., University of Pennsylvania, Philadelphia, 1861, died at his home in Allentown, Pa., of pneumonia, March 28, aged 62.

William R. Warner, M.D., senior member of the firm of William R. Warner and Company, died April 3, from apoplexy, at his home in Philadelphia.

Thomas Couturier Robertson, M.D., University of South Carolina, Charleston, 1872, died at his home in Columbia, S.C., March 21, from pneumonia.

John Powell Hunter, M.D., University of Pennsylvania, Philadelphia, 1893, died at his home in West Chester, Pa., March 27, aged 35.

James T. Krepps, M.D., Jefferson Medical College, 1875, died at his home in Pittsburg, Pa., from cerebral hemorrhage, April, aged 54.

Societies.

Medical Association of the State of Alabama, Selma, April 16, 1901.
Medical Society of the State of California, Sacramento, April 16-18, 1901.
South Carolina Medical Association, Florence, April 17, 1901.
Medical Association of Georgia, Augusta, April 17, 1901.
Louisiana State Medical Society, New Orleans, April 18-20, 1901.
Medical and Chirurgical Faculty of Maryland, Baltimore, April 23-26, 1901.
Texas State Medical Association, Galveston, April 23, 1901.
American Association of Genito-Urinary Surgeons, Old Point Comfort, April 30, 1901.
Association of American Physicians, Washington, D. C., April 30, 1901.
American Gastro-Enterological Association, Washington, D. C., May 1, 1901.
Kansas Medical Society, Pittsburg, May 2-4, 1901.
American Surgical Association, Baltimore, Md., May 7-9, 1901.
American Therapeutic Society, Washington, D. C., May 7-9, 1901.
Nebraska State Medical Society, Lincoln, May 7-9, 1901.
Oklahoma Territory Medical Association, Oklahoma City, May 8, 1901.
Mississippi State Medical Association, Jackson, May 8, 1901.
Washington State Medical Society, Seattle, May 8-9, 1901.
Ohio State Medical Society, Cincinnati, May 8-10, 1901.
Arkansas Medical Society, Hot Springs, May 14-16, 1901.
Medical Association of Montana, Great Falls, May 15-16, 1901.
Michigan State Medical Society, Battle Creek, May 15-16, 1901.
Iowa State Medical Society, Davenport, May 15, 1901.
Indiana State Medical Society, South Bend, May 15-17, 1901.
New Hampshire Medical Society, Concord, May 16-17, 1901.
Medical Association of Missouri, Jefferson City, May 21-23, 1901.
Illinois State Medical Society, Peoria, May 21-23, 1901.
Medical Society of North Carolina, Durham, May 21-23, 1901.
Connecticut Medical Society, Hartford, May 22-23, 1901.
Kentucky State Medical Society, Louisville, May 22-24, 1901.
Medical Society of West Virginia, Grafton, May 22-24, 1901.
American Laryngological, Rhinological and Otological Society, New York City, May 23-25, 1901.
American Pediatric Society, Niagara Falls, N. Y., May 28, 1901.
American Gynecological Association, Chicago, May 28, 1901.
American Climatological Association, Niagara Falls, N. Y., May 30, 1901.

Pawtucket (R. I.) Medical Association.—The sixth annual meeting of this body was held March 21, when Dr. George H. Stanley was elected president; Dr. Charles H. French, vice-president; Dr. Charles A. Glancy, secretary; and Dr. Charles A. Stearns, librarian.

Medical Association of the State of Alabama.—The annual session of this Association will be held in Selma April 16-19, under the presidency of Dr. Russell McWhorter Cunning-

ham, Ensley. Dr. Samuel G. Gay, Selma, is chairman of the committee of arrangements.

Silver Bow County (Mont.) Medical Association.—At the annual meeting of this organization, held in Butte, Dr. John W. Gunn was elected president; Dr. Donald Campbell, vice-president; Dr. John A. Donavan, secretary; Dr. William L. Renick, corresponding secretary, and Dr. Thomas A. Grigg, treasurer, all of Butte.

Afro-American Medical Association for Harris County (Texas).—On March 29 the colored physicians of Houston met for the purpose of organizing a medical association, and elected the following officers: Dr. John H. Wilkins, president; Dr. Samuel M. Lyons, secretary, and Dr. Fountain L. McDavid, treasurer.

North Central Ohio Medical Society.—The twentieth annual session of the Society was held in Mansfield March 29 and 30, when the following officers were elected: Dr. Arthur M. Duncan, Bucyrus, president; Drs. Josiah S. Hedges, Mansfield, and A. Melville Crane, Marion, vice-presidents; Dr. J. Lilian McBride, Mansfield, secretary, and Dr. S. Edwin Findley, Mansfield, treasurer.

Tri-State Medical Society of Iowa, Illinois and Missouri.—The meeting of this Society, in Keokuk, Iowa, April 3, was marked by the official sanction of the movement to pass legislation preventing the marriage of mental and physical degenerates, and that favoring the unsexing of habitual criminals. The following officers were elected: Dr. John C. Murphy, St. Louis, president; Drs. Bayard Holmes, Chicago, and Ellet O. Sisson, Keokuk, Iowa, vice-presidents; Dr. James F. Percy, Galesburg, Ill., treasurer, and Dr. William B. La Force, Ottumwa, Iowa, secretary

National Association for the Study of Epilepsy and the Care and Treatment of Epileptics.—The first annual session of this organization will be held in Washington, D. C. May 14 and 15. Many papers of value from European and American students, and full reports of the progress that is being made in the care and treatment of epileptics in this country are promised for this meeting. The president of the Association is Hon. William P. Letchworth, LL.D., Portage, N. Y.; first vice-president, Dr. Frederick Peterson, New York City; secretary, Dr. Wm. P. Spratling, Craig Colony, Sonyea, N. Y., either of whom, on request, will give further information of the coming meeting.

American Gastro-Enterological Association.—The fourth annual meeting of this Association will be held in Washington, D. C. May 1. Among the papers to be read are those by Dr. Max Einhorn, New York, on "Syphilis of the Liver"; Dr. John C. Hemmeter, Baltimore, on "The German Clinics of Today"; Dr. A. L. Benedict, Buffalo, N. Y., on "Etiology of Hepatic Sclerosis"; Dr. Fenton B. Turck, Chicago, on "Experiments in Peristalsis"; Dr. George W. McCaskey, Fort Wayne, Ind., on "Some Clinical Studies in Gastric Secretion," and Dr. Charles D. Spivak, Denver, Colo., "Report of a Case of Cancer of the Cardiac End of the Esophagus at a Distance of two inches from the Incisor Teeth in a Man 5 ft. 3 in. tall."

Ontario Medical Association.—The annual meeting of the Ontario Medical Association will be held in Toronto, June 19 and 20, these dates having been specially arranged so as not to conflict with the meeting of the AMERICAN MEDICAL ASSOCIATION and also with that of the American Association of Railway Surgeons. The president, Dr. Angus McKinnon, of Guelph, has appointed Dr. Henry T. Machell, Toronto, chairman of the Committtee on Papers and Business, and Dr. Bruce L. Riordan, of the same place, chairman of the Committee of Arrangements. There will be three leading discussions: "Gastric Ulcer," "Empyema" and "Extra-Uterine Pregnancy." The leading part in the discussions will be assigned to members from outside points, such as Hamilton, Ottawa, Kingston, London, etc.

American Academy of Medicine.—The twenty-sixth annual meeting of the Academy will be held at the Hotel Aberdeen, St. Paul, Minn., June 1, 1901, and continuing through June 3. The principal features of the meeting will be a symposium on "Institutionalism"; and another on "Reciprocity in Medical Licensure." Papers on both topics have been promised, as well as others on different subjects. The address of the president, Dr. S. D. Risley, Philadelphia, will be delivered on the evening of June 1 and the annual social session is to be held on the evening of June 3. Members of the profession are always welcomed to the open sessions of the Academy. The secretary, Dr. Charles McIntire, Easton, Pa., will send the program, when issued, blank applications for fellowship, etc., on request.

CHICAGO MEDICAL EXAMINERS' ASSOCIATION.

Meeting held March 18.

President, Dr. Denslow Lewis, in the chair.

Interstitial Nephritis.

DR. EDWARD F. WELLS read a paper on "The Diagnosis and Prognosis of Chronic Interstitial Nephritis." He stated that middle-aged or older men, who are robust, actively and energetically aggressive, and good livers, are peculiarly apt to develop this malady. These are the successful men of affairs, who often take out large lines of life insurance, and who from many points of view are desirable policy-holders. But it is in this class that the largest and most unexpected losses occur. In private practice they are patients who give their physicians much concern and anxiety. They do not bear the severe acute infections well, and are peculiarly liable to chronic interstitial nephritis. This disease and the associated cardiovascular changes have their beginning at the time when the essential chemico-toxic causative agent appears in the blood in such quantity as to irritate, in the peculiar manner necessary to bring about the characteristic lesion in the capillary endothelia, particularly in the kidney. There may be, therefore, a distinct premonitory stage, and there is certainly a very early stage of the disease in which the lesions are very slight, but these stages must elude observation until we shall have at our hands more definite information as to the essential cause of the malady, together with the means of detecting it in the blood, secretions or excretions, or until certain symptoms which are now of doubtful significance shall have been given a more definite value. Every person, middle-aged or over, should have the urine examined twice a year, and in the case of a robust, active man who is a good liver, and who is engrossed in business, such examination should be made three or four times a year. The prognosis of chronic Bright's disease is in every way bad, as to recovery. However, on an average the prognosis for prolonged life is much better than is ordinarily supposed. Even after uremic symptoms have become manifest, if such patients are surrounded with every device at command, their lives may be prolonged for many years. With all this, physicians must not under-estimate the gravity of such cases or lose sight of the fact that in many instances death occurs within a comparatively short period after the recognition of the affection.

DR. JOHN M. DODSON stated that it is an established fact that certain well-recognized diseases of the kidney and of the vascular system are due to toxic agents circulating in the blood, which normally are eliminated in the urine. The question which the examiner is called upon to determine is not how long the individual is likely to live, but whether he is or is not absolutely healthy at the present time. In regard to uric acid disorders, it is difficult to determine the presence or absence of them in an ordinary examination. The examination of a single specimen of urine is of very little value. The most important features are the total quantity and the total solids. Theses two factors considered jointly furnish a measure of what the kidneys are doing. In the early stages of the disease the vascular system is of especial importance. Slight disturbances of the heart and blood-vessels are likely to occur early in the group of disorders. He thoroughly agreed with Dr. Wells that the view popularly held by the laity and even among physicians, as to the gravity of prognosis, is a mistaken one, especially with proper treatment, provided the patient is tractable and willing to follow directions. It is not a question of drugs, but of dietetic and hygienic management.

DR. JOHN A. ROBISON said there is one point of importance to the examiner and the insurance company, namely, that they obtain from the family physician a detailed history of each patient in whom they suspect kidney disease. He did not think it would be a breach of confidence on the part of the family physician to give this information, if agreeable to the applicant, and it would also be to the interest of the applicant. There is no applicant for insurance who wishes to be turned down. He would rather be told beforehand that he can not pass, so that he may go to some other company whose rules are not so rigid.

DR. FRANK BILLINGS has long had in mind the following division of chronic interstitial nephritis as he sees it clinically: 1. The classical nephritis which is associated with the anatomical changes in the kidney with the cardiovascular fibrosis so common to the disease and often the fibrosis extending to other organs, such as the liver—a chronic hepatitis. 2. Another set of cases in which the kidney has fibroid changes going on in it probably from the beginning, while the cardiovascular changes are but slight, so slight that a cursory examination would not reveal them. 3. Those cases in which the cardiovascular changes are marked and the kidney but little involved at first, as is evidenced by the excretion of solids. Then another class of cases which occurs, especially in women, and which he has not yet definitely classified. They are cases in which the urine is markedly insufficient and deficient in solids of all kinds and almost classical as far as the relation of the solids go to each other, with diminution in urea, phosphates, in chlorids and sulphates, and low specific gravity. There are no cardiovascular changes, but marked nutritional ones, as shown by the flabby musculature and the secondary anemia. These patients have but little endurance for mental or physical work. They go on for a long time until proper hygienic measures are instituted. Sometimes a small amount of albumin is found with hyaline casts, etc. These are the four classes of cases. The first is easily recognized. The second, in which the kidney is doubtless involved without much vascular change, the essayist had referred to as the insufficient kidney—insufficient not only in solids, but in fluids as well. The urine is not increased in amount because the cardiovascular changes are perhaps coincident with the kidney change. Then comes the third class in which there is insufficient urine both in quantity and quality, but without the cardiovascular changes. He is satisfied that these different classes of cases exist, and that there must be some toxin which differs in each; some difference in the quality or quantity of toxin in the one case affecting the whole cardiovascular system or kidney, and in another affecting chiefly the kidney, selective in character. The cardiovascular system finally reaches a condition in which the whole vascular tone is diminished, because of faulty digestion, assimilation, metabolism, or what-not.

One of the signs indicative of a bad prognosis is hemorrhage. If it occurs in chronic interstitial nephritis, such as a real hemorrhage into the retina or elsewhere in the body, in the skin, etc., the patient will die in two years or less time. He is at the beginning of the end. He has observed albuminuric retinitis in patients for as long as five or six years. In one patient it was present for over seven years, but if there be real hemorrhages, subcutaneous, submucous, into the eye, or stomach, or from the bowel, in any amount, then we may expect death within two years.

DR. DENSLOW LEWIS said that the increase in mortality during middle life in Chicago and other large cities is due, in his judgment, chiefly to a change in the mode of life among business men. The concentration of energy, the accumulation of wealth, the development of club life, with all that implies, produce often errors of digestion and a faulty metabolism which may manifest themselves in kidney lesions. In most cases the advent is insidious and the true condition of affairs can only be recognized by repeated examinations extending over some little time. When it is appreciated that large policies are taken out as a rule by men in middle life, whose actual state of health is not easily determined without very careful investigation, the absurdity of the usual methods is apparent. If physicians are to be consistent, something more is necessary than the determination of the presence or absence of albumin and sugar or the recognition of a few casts.

DR. WELLS, in closing, thought Dr. Robison's plan of inviting the family physician to join in insurance examinations, or to obtain information from him, impractical. The information obtained by the family physician should be inviolate. If he should furnish such information, he would necessarily do so as the advocate of the patient and not as an aid to the insurance company. He believes that the sphygmograph is the most valuable instrument for measuring and recording the tension and elasticity of the artery. It is certainly much more reliable than the finger, and it will show everything that the finger will, and more. In addition to this, it is a matter of record and can be referred to later. He said cases referred to by Dr. Billings as being rapidly fatal are those which every physician has met. The reason, probably, is that in such cases the heart and vascular system is hypertrophied to such a degree that when it once begins to lose the balance which has only been kept up by extraordinary efforts, the downward course is more rapid than where the balance has been kept up by a very much less cardiac effort. His own experience as to hemorrhages is entirely in accord with that of Dr. Billings.

Methods of Examination for Industrial Insurance.

DR. W. S. ROYCE read a paper on this subject. Industrial insurance was defined as an insurance on healthy individuals, covering all ages for 2 years next birthday to 70 years inclusive, in amount ranging from $8 to $1200 per policy, with premiums running five cents a week and multiples thereof up to $1 collected weekly by the company's agents at the applicant's house, with four weeks of grace in the payment, with proceeds of the insurance payable at death or at the end of the endowment period, and with all claims paid immediately upon proof and with paid-up policies, cash dividends and extended insurance.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting held March 27.

Dr. F. M. Perkins in the chair.

Funnel Chest.

DR. C. A. E. CODMAN read a paper entitled "The Acquired Form of Funnel Chest, with Report of Cases." The speaker has found that many writers regard this condition as a somewhat rare one. Ebstein believes that the funnel-shaped chest may be due to injuries or disease of the osseous system, or that it may arise from certain changes occuring during fetal life. The condition therefore may be either acquired or congenital. Diseases of the respiratory system, such as pneumonia and bronchitis, may play an important part in its development. The reason it does not occur more frequently in rickets is because in this disease all the bones are equally involved in disturbances of nutrition. The treatment is gradual exercise, and respiratory practice. The speaker detailed a series of cases he had treated.

DR. THOMAS J. MAYS spoke of the etiology. As to the mechanism of its production, one should remember that the external chest adapts itself to internal pressure. If there be an adhesion to the sternum, for instance, the chest will be pulled inward.

DR. J. T. RUGH has seen the funnel-shaped chest result from adenoids, also other cases in which there has been an arching forward of the spine due to traction exerted within the chest.

Treatment of Arthritis Deformans.

DR. M. G. TULL reported a "Case of Arthritis Deformans Successfully Treated by the Application of Ice to the Spinal Column." The patient was first admitted to the Orthopedic Hospital for treatment for flat-foot, and at that time was also suffering from deformity of the neck, ankles, fingers and other joints. The flat-foot was partially relieved, but she was discharged as incurable. She was 22 years of age, and stated that when 10 years old she suffered from rheumatism affecting the joints and accompanied by swelling. Some time ago there was so much deformity that braces were applied to the knees and her condition was almost helpless. The treatment consisted in the application of an ice-bag about eighteen inches long down the spinal column, renewed three times during the twenty-four hours. Internally she was given carbonate of guaiacol—5 gr.—three times a day, together with tablets of citrate of lithium. This treatment was continued for some time and a marked improvement in her condition occurred. The anchylosis of the fingers almost disappeared, and she is able to walk and to do general housework.

DR. J. A. SCOTT thought the results obtained were good, but

that arthritis deformans and allied conditions should be more accurately studied and properly classified. As to the cause of rheumatism, he pointed to the findings of certain micro-organisms by different investigators.

DR. A. A. ESHNER referred to a case of arthritis deformans which had been presented before the Society several years ago.

DR. RUGH spoke of cases of this disease in which he tried the hot air treatment for a year, but without any improvement whatever.

Fango-therapy

DR. W. C. HOLLOPETER read a paper on this subject. The speaker had become interested in this from the good results reported from Italy. "Fango" is a kind of mud or clay obtained in certain hot springs in Italy. The material rises to the surface in bubbles of air, which on bursting deposits this soft greyish, or brownish material around the edges of the springs. Chemically it is composed of iron, alkalies, phosphates, carbonic acid gas, etc. The material may be exported in barrels. The material may be laid directly on the body and is easily removed by warm water. As the patient lies upon the bed a hot moist blanket is slipped under him, this being protected by a rubber sheet. Fango is then applied in a layer, and afterward the parts are wrapped up and allowed to remain for half to one hour. The parts are then douched and massage and Swedish movements applied thoroughly. The speaker reported certain cases of arthritis and rheumatism in which this treatment brought about marked amelioration of the symptoms. The treatment is indicated in such conditions as neurasthenia, peripheral neuralgia, etc.

DR. F. SAVARY PEARCE said he had noticed good results from this treatment in cases of neuritis, and it might be of considerable value in patients suffering from uric acid poisoning.

DR. CHARLES W. BURR stated that through the invitation of Dr. Hollopeter he had seen the methods used. He is under the impression that it might be indicated in all those conditions in which a poultice of any kind is indicated. He does not believe that the chemical constituents of fango would have any influence in bringing about the good results. He could see how good results might be obtained by the methods in certain types of neuritis.

Antipneumococcic Serum.

DR. I. NEWTON SNIVELY read a paper on "The Treatment of Croupous Pneumonia by Antipneumococcic Serum." The speaker had written to the various health departments in five of our largest cities, to find out the total number of deaths from pneumonia and tuberculosis—about 4000 more from the former than from the latter disease. In Philadelphia there were 240 more deaths from pneumonia than from tuberculosis. The speaker reviewed the literature on the subject, from the time of the discovery of the pneumococcus by Fraenkel. In about 75 per cent. of the cases the disease is caused by the pneumococcus. A considerable percentage is due to a mixed infection. In this disease the things to be most dreaded are endocarditis and toxemia. If a mixed infection exists, the condition is more or less of a septic one. The speaker detailed a series of cases of croupous pneumonia in which the antipneumococcic serum was used with marked benefit. The usual dose was 20 c.c. given hypodermically, and repeated every three hours. The serum itself appears to be practically harmless. Dr. J. C. Wilson had given as much as 400 c.c. without causing dangerous symptoms. One of his patients was given 360 c.c. within sixty hours. The good results of the remedy will doubtless be obtained in those cases of pneumonia due to the pneumococcus only, and it should be given early. He had collected a series of 113 cases of pneumonia treated by the serum, with 13 deaths.

DR. J. M. FISHER had recently tried antipneumococcic serum in 2 cases of pneumonia, but he could not say that good results had followed.

DR. EDWIN ROSENTHAL uses both antipneumococcic and antistreptococcic serum in children, with benefit.

DR. W. E. HUGHES referred to some experiments along this line made by Dr. W. S. Carter and himself, years ago. They used human serum from cases of pneumonia. No crises ever took place from the serum so used.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Meeting held March 18.

Dr. Parker Syms, president.

Primary Carcinoma of the Tip of the Appendix.

DR. J. RIDDLE GOFFE presented this specimen, which had been removed from a girl of 17, who had suffered from a chronic appendicitis. The growth appeared to be primary in the appendix. Specimens from the tumor and adjacent structures were exhibited under the microscope.

Operative Treatment of Hemorrhoids.

DR. WILLIAM DUFF BULLARD read a paper on this subject. He said that the only methods of treatment worthy of serious consideration are the injection method, the Whitehead operation, the ligature operation and the clamp and cautery operation. He does not approve of the injection treatment, and consequently has had no personal experience with it. If cleverly done, it gives temporary relief, but is the stock in trade of charlatans. From 5 to 30 drops of the solution are injected at a time, the object being to secure contraction of the blood-vessels and adhesions betwen the mucous membrane and the submucosa. Sometimes these injections cause the formation of ulcers or fistulæ, or give rise to diffuse inflammation. They have even been charged with causing pyemia and death, but he has been unable to find a well authenticated case of death from this cause. He thinks the Whitehead operation is a difficult one, and liable to be followed by various mishaps, and that, fortunately, its popularity is waning. In the ligature operation the sphincter is first dilated with the fingers and then the first hemorrhoids to be attacked are those lying on the posterior wall close to the anus. Where the attachment of the hemorrhoid is broad, it should be cut loose from the skin and cubcutaneous tissue in a line parallel to the long axis of the gut. The patient should be kept in bed until the ligatures have come away, or about one week, the bowel being confined for the first two or three days by the use of an opiate. In doing the clamp and cautery operation, the hemorrhoids are successively seized with the clamp, cut off, and the stump thoroughly seared with a hot iron, care being taken to leave a thick eschar lying in the direction of the long axis of the bowel. Three grasps of the clamp are usually sufficient, but more might be made if thought desirable, provided precaution is taken to see that the eschars lie in the long axis of the gut. The patient is usually out of bed in five days. The speaker is disposed to think there is more danger of recurrence after the use of the ligature than with the clamp and cautery.

DR. JAMES P. TUTTLE said that a rather extensive experience with the injection treatment justified him in asserting that a large number of cases of hemorrhoids, if not too advanced, can be radically cured in this way, although the method is certainly not applicable to all varieties. Many cases of hemorrhoids in the early stages are quite amenable to simple local treatment combined with dietetic and hygienic measures. In these cases, if the sphincter is gradually dilated on alternate days, with a bougie, and the patient directed to use cold applications and injections of such astringents as krameria, the patient will be greatly benefited. Occasionally the injection treatment was followed by the formation of a slough, but this may be said against either the ligature or the clamp and cautery operation. In performing the Whitehead operation the error of removing the tissue too deeply is often made.

DR. JOHN F. ERDMANN said that he had used the injection method in several cases, but there is just as much discomfort attendant on its use as if cocain had been injected; hence, it would be better to do a more radical operation under local anesthesia. Nor does he approve of the Whitehead operation. He prefers the ligature to the clamp operation, though he has used both. After either, the patient is only required to remain in bed a sufficient length of time to guard against secondary hemorrhage; hence the period of confinement should be the same after both operations. Secondary hemorrhage sometimes follows either of these. The Whitehead operation is more liable to be followed by stricture than are the other two, but this accident might occur after any one of these operations.

DR. GOFFE thought the Whitehead operation had been too harshly criticized. He has found it advantageous, when doing this operation, to make use of four sustaining sutures.

Arteriosclerosis.

DR. ISAAC ADLER read a paper on this topic. He thinks that while Thoma's theory affords a sufficient explanation for the lesions in the larger and largest vessels, it does not adequately account for the alterations observed in the smallest vessels and in the parenchyma. The arteriosclerosis is not confined to the blood-vessels, but manifests itself in the organs and tissues as a hyperplasia at first, and ultimately as a more or less diffused fibrosis. It is by no means a disease of senility, but makes its appearance at all periods of life, even in infancy. Local and general arteriosclerosis are often associated with certain intoxications, e. g., gout. Hereditary predisposition is probably an important factor in the etiology of arteriosclerosis. The clinical recognition of this pathologic process is not always easy. The accentuation of the second aortic sound is pathognomonic, but its absence proves nothing. Hypertrophy and dilatation of the left ventricle of the heart are only present in a limited number of cases, and increased blood pressure is not a constant symptom. The cardiac type often begins in the smallest branches of the coronary arteries. The renal type apparently commences in the interstitial tissue of the kidney, and in the early stages even the examination of the urine leads to no positive results. At a somewhat later stage it is characterized by a urine of low specific gravity, the occasional presence of a trace of albumin and the constant presence of granular casts. Still another class of cases may be denominated cerebral, and it is possible to distinguish clinically a spinal and a gastro-intestinal type. The cases of spinal type in a general way resemble tabes, but lack the progressiveness of that disease. Under the head of gastro-intestinal he would include arteriosclerosis of the liver and pancreas, many cases of arteriosclerosis showing an advanced stage of this process in the pancreas. The most that the physician can hope to accomplish by therapeutic measures is to arrest the process, and fortunately this is within his power, especially in those cases dependent on some form of intoxication. In every case of arteriosclerosis he would urge the systematic and persistent use of the iodids.

DR. C. E. QUIMBY said he believes that anything which affects tissue nutrition may lead to arteriosclerosis by weakening its effective forces. Aortic accentuation means only high arterial tension, and unless it is persistent it is not an indication of arteriosclerosis.

DR. N. E. BRILL referred to a case of arteriosclerosis occurring in a girl of 12. When admitted to the hospital in 1888, there was marked hypertrophy of the heart, the temporal arteries tortuous and the radials hard. The urine contained a trace of albumin and numerous hyaline and granular casts. An infarction had formed in the spleen, and shortly afterward intestinal hemorrhage and death followed. The autopsy revealed an arteriosclerosis of astonishing extent and degree.

DR. LOUIS FAUGÈRES BISHOP remarked that he had found arteriosclerosis exceedingly common and well marked in the negro race.

Association News.

Annual Announcement.

The fifty-second annual session (54th year) of the AMERICAN MEDICAL ASSOCIATION will be held in St. Paul, Minn., on Tuesday, Wednesday, Thursday and Friday, June 4, 5, 6 and 7, commencing on Tuesday at 11 a. m.

DELEGATES.

The delegates shall receive their appointment from permanently organized state medical societies, and such county and district medical societies as are recognized by representation in their respective state societies, from the medical department of the Army, the Navy and the Marine-Hospital Service of the United States, and from oral and dental societies in good standing. *Provided*, however, that no state, county or other auxiliary body sending representatives shall receive into its membership any one who may, after 1901, have received the degree of Doctor of Medicine on less than four years of graded instruction or an equivalent requirement.

Each delegate shall hold his appointment for one year, and until another is appointed to succeed him, and shall participate in all the business and the affairs of the ASSOCIATION.

Each state, county and district medical society, entitled to representation, shall have the privilege of sending to the ASSOCIATION one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number. *Provided*, however, that the number of delegates from any affiliated society shall not exceed the ratio of one in ten of the members of such society. The Army and Navy, and the Marine-Hospital Service of the United States shall be entitled to the same proportionate representation as that of affiliated medical societies.

No individual who shall be under sentence of expulsion or suspension from any state or local medical society of which he may have been a member, or whose name shall have been, for non-payment of dues, dropped from the rolls of the same, shall be received as a delegate to this Association, or be allowed any of the privileges of a member, until he shall have been relieved from the said sentence or disability by such state or local society, or shall have paid up all arrears of membership; nor shall any person not a member and supporter of a local medical society, where such a one exists, be eligible to membership in the AMERICAN MEDICAL ASSOCIATION.

No one expelled from this ASSOCIATION shall be received at any time thereafter as a delegate or member, unless by a three-fourths vote of the members present at the meeting to which he is sent, or at which he is proposed.

PERMANENT MEMBERS.

The permanent members shall consist of all those who have served in the capacity of delegates, and of such other members as may receive the appointment by unanimous vote, and shall continue such so long as they remain in good standing in the body from which they were sent as delegates, and comply with the requirements of the By-Laws of the ASSOCIATION. Permanent members shall at all times be entitled to attend the meetings, and participate in the affairs of the ASSOCIATION, so long as they shall continue to conform to its regulations, but without the right of voting.

MEMBERS BY APPLICATION.

Members by application shall consist of such members of the state, county and district medical societies entitled to representation in this association as shall make application for admission, in writing, to the treasurer, and accompany said application with a certificate of good standing, signed by the president and secretary of the society of which they are members, and the annual fee, $5. They shall have their names on the roll, shall have all the rights and privileges accorded to permanent members, and shall retain their membership on the same terms.

MEMBERS BY INVITATION.

Members by invitation shall consist of distinguished practitioners of foreign countries who may be invited by the officers of Sections or of the ASSOCIATION. They shall hold their connection with this ASSOCIATION until the close of the annual session to which they are invited, and shall be entitled to participate in all of its affairs, as in the case of delegates, but without the right to vote.

RIGHT TO VOTE.

Every member-elect, prior to the permanent organization of the annual meeting, or *before voting on any question*, after the meeting has been organized, *must exhibit his credentials to the proper committee*, and sign these regulations, inscribing his name and address in full, specifying in what capacity he attends, and, if a delegate, the title of the institution from which he has received his appointment.

DELEGATE BADGES.

No one can be registered as a delegate without a certificate as called for by the above clause in the Constitution. Delegates will be furnished with delegate badges on presentation of their credentials.

REGISTRATION AT MEETING.

Each delegate or member, when he registers, is requested to record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers.

ADDRESSES IN SECTIONS.

The Chairman of each Section shall prepare an address on the recent advances in the branches belonging to his Section, including such suggestions in regard to improvements or methods of work as he may deem important, and present the same to the Section over which he presides on the first day of its annual session. The reading of such address shall not occupy more than twenty minutes.

LENGTH OF PAPERS.

No paper, the reading of which occupies more than twenty minutes, shall be read before any Section.

ORATIONS.

The following annual orations will be delivered: On Medicine, Dr. N. S. Davis, Jr., Chicago; on Surgery, Dr. John A. Wyeth, New York City; on State Medicine, Dr. Geo. M. Kober, Washington, D. C.

Chairman, Committee of Arrangements, Dr. John F. Fulton, St. Paul, Minn.

PROPOSED AMENDMENTS.

Amendment to the Constitution and By-laws, offered by Dr. D. Benjamin, Camden, N. J.: A committee on statistics shall be annually appointed by the president.

Amendment to the Constitution and By-laws, offered by Drs. Guy Hinsdale, Philadelphia, and L. B. Tuckerman, Cleveland, Ohio: RESOLVED, That Article I, Section VIII, of the By-laws, be changed, so that the Nominating Committee shall include a delegate to be elected by each one of the component Sections.

OFFICERS OF SECTIONS, 1900-1901.

Practice of Medicine—Chairman, J. M. Anders, Philadelphia; Secretary, Wm. Britt Burns, Memphis, Tenn.

Obstetrics and Diseases of Women—Chairman, Henry P. Newman, Chicago; Secretary, C. L. Bonifield, Cincinnati, Ohio.

Surgery and Anatomy—Chairman, A. J. Ochsner, Chicago; Secretary, Martin B. Tinker, Johns Hopkins Hospital, Baltimore, Md.

Hygiene and Sanitary Science—Chairman, Ernest Wende, Buffalo, N. Y.; Secretary, J. N. Hurty, Indianapolis, Ind.

Ophthalmology—Chairman, J. A. Lippincott, Pittsburg, Pa.; Secretary, E. C. Ellett, Memphis, Tenn.

Diseases of Children—Chairman, Samuel W. Kelley, Cleveland, Ohio; Secretary, Wm. E. Darnall, Atlantic City, N. J.

Stomatology—Chairman, R. R. Andrews, Cambridge, Mass.; Secretary, Eugene S. Talbot, Chicago.

Nervous and Mental Diseases—Chairman, H. A. Tomlinson, St. Peter, Minn.; Secretary, F. Savary Pearce, Philadelphia.

Cutaneous Medicine and Surgery—Chairman, W. L. Baum, Chicago; Secretary, R. R. Campbell, Chicago.

Laryngology and Otology—Chairman, John N. Mackenzie, Baltimore; Secretary, George C. Stout, Philadelphia.

Materia Medica, Pharmacy and Therapeutics—Chairman, N. S. Davis, Jr., Chicago; Secretary, J. N. Upshur, Richmond, Va.

Physiology and Dietetics—Chairman, Elmer Lee, New York City; Secretary, R. Harvey Cook, Oxford, Ohio.

Pathology and Bacteriology—Chairman, Ludvig Hektoen, Chicago; Secretary, Frank B. Wynn, Indianapolis, Ind.

Medical Societies Entitled to Representation in the American Medical Association

April 1, 1901.

In accordance with the Constitution, this list is prepared as certified by the secretaries of the State and Territorial medical societies.

ALABAMA.

Alabama State M S., and all County Societies.

ARIZONA.

Arizona M. A.
Maricopa County M. S.
Pima County M. S.
Yarapai County M. S.

ARKANSAS.

Arkansas State M. S.
Baxter County M. S.
Benton County M. S.
Boone County M. S.
Craighead County M. S.
Crawford County M. S.
Eureka Springs, Carroll County, M. S.
Hempstead County M. S.
Hot Springs M. S.
Independence County M. S.
Jefferson County M. S.
Lee County M. S.
Little Rock M. S.
Phillips County M. S.
Polk County M. S.
Sebastian County M. S.
Washington County M. S.
White County M. S.

CALIFORNIA.

M. S. State of California
Alameda County M. S.
California Acad. of Med.
California Northern District M. S.
El Paso M. S.
Fresno County M. S.
Humboldt County M. S.
Kern County M. S.
Lake County M. S.
Los Angeles County M. S.
Marin County M. S.
Medico-Chirurg. M. S.
Monterey County M. S.
Orange County M. S.
Pasedena M. A.
Placer County M. S.
Pomona Valley M. S.
Riverside County M. S.
San Diego County M. S.
Sarcamento S. for Med. Improvement.
San Bernandino County M. A.
San Francisco County M. S.
San Francisco Clin. S.
San Joaquin County M. S.
San Joaquin Valley M. S.
San Louis Obispo and Northern Santa Barbara County M. A.
Santa Barbara County M. S.
Santa Clara County M. S.
Santa Cruz County M. S.
Society of German Physicians of San Francisco
Sonoma County M. S.
Southern California M. S.
Tulare County M. S.
Ventura County M. S.
Yolo County M. S.
Yuba and Sutter Counties M.S.

COLORADO.

Colorado State M. S.
Alumni Ass'n of the Gross M. College.
Denver Clin. S.
Denver Clin. and Path. S.
Denver and Arapahoe M. S.
Denver Med. Col. Alumni Association.
El Paso County M. S.
Lake County M. S.
Las Animas County M. S.
Otero County M. S.
Pueblo County M. S.
Weld County M. S.

CONNECTICUT.

Connecticut State M. S.
Bridgeport M. A.
Danbury M. A.
Fairfield County M. A.
Hartford County M. A.
Hartford M. S.
Litchfield County M. A.
Middlesex County M. A.
New Haven M. A.
New Haven County M. A.
New London County M. A.
Norwich M. A.
Stamford M. S.
Tolland County M. A.
Waterbury M. A.
Windham County M. A.

DISTRICT OF COLUMBIA

Med. Ass'n of D. C.

DELAWARE.

Delaware State M. S.

FLORIDA.

Florida State M. S.
Alachua County M. S.
Duval County M. S.
Hillsborough M. S.

GEORGIA.

Georgia State M. A.
Atlanta Soc. of Med.
Macon M. S.

IDAHO.

Idaho State M. S.

ILLINOIS.

Illinois State M. S.
Adams County M. S.
Æsculapian S. of Wabash Valley.
Alton M. S.
Aurora M. S.
Belleville M. S.
Brainard Dist. M. S.
Bond County M. S.
Bureau County M. S.
Cairo M. S.
Capital Dist. M. S.
Central Dist. M. S.
Champaign County M. S.
Chicago Acad. of Med.
Chicago Gynecological S.
Chicago Laryngological Soc.
Chicago M. S.
Chicago Medico-Legal S.
Chicago Neurological S.
Chicago Ophthal. and Otol. S.
Chicago Orthopedic S.
Chicago Pathological S.
Chicago Pediatric Society.
Chicago Physicians' Club.
Chicago Soc. Internal Med.
Chicago Soc. Med. Examiners.
Chicago Therapeutic Society.
Clay County M. S.
Clinton County M. S.
County Hosp. Alumni S.
Crawford County M. S.
Jo. Daviess Co. M. S.
Decatur M. S.
Dewitt County M. S.
Douglas County M. S.
E. St. Louis M. S.
Egyptian M. S.
Fox River Valley M. S.
Fulton County M. S.
Galva Dist. M. S.
Galesburg M. S.
Gallatin County M. S.
Hancock County M. S.
Hardin County M. S.
Iowa and Ill. Cent. Dist. M. S.
Jacksonville Med. Club.
Jefferson Co. M. S.
Jersey County M. S.
Kankakee County M. S.
Lake County M. S.
La Salle County M. S.
Lawrence County M. S.
Macoupin County M. S.
McDonough County M. S.
McHenry Co. M. S.
McLean County M. S.
Med. and Sur. S. of Western Ill.
Military Tract M. A.
Monroe County M. S.
Montgomery Co. M. S.
Morgan County M. S.
Moultrie County M. S.
North Central Illinois M. S.
North Chicago M. S.
Ogle County M. S.
Ottawa City M. S.
Peoria M. S.
Perry County M. S.
Pike Co. M. S.
Pullman Dist. M. S.
Quincy Med. and Lib. Ass'n.
Rock River Valley M. A.

Saline County M. S.
Sangamon County M. S.
Scandanavian M. S. Chicago.
Shelby County M. S.
Southeastern Illinois M. S.
Southern Illinois M. S.
Springfield Med. Club.
St. Clair County M. S.
Stephenson County M. S.
Tri-County M. S.
Twin City Clin. Ass'n of Champaign and Urbana.
Urbana S. of P. & S.
Vermillion County M. S.
Wabash County M. S.
Warren County M. S.
Western M. and S. S.
White County M. S.
Whiteside County M. S.
Williamson County M. S.
Winnebago County M. S.
Woodford County M. S.
Will County M. S.

INDIANA.

Indiana State M. S.
Allen County M. S.
Bartholomew County M. S.
Benton County M. S.
Blackford County M. S.
Boone County M .S.
Carroll County M. S.
Cass County M. S.
Clark County M. S.
Clay County M. S.
Daviess County M. S.
Dearborn County M. S.
Decatur County M. S.
Dekalb County M. S.
Delaware County M. S.
Dubois County M. S.
Elkhart County M. S.
Fayette County M. S.
Floyd County M. S.
Fountain County M. S.
Franklin County M. S.
Gibson County M. S.
Grant County M. S.
Greene County M. S.
Hamilton County M. S.
Hancock County M. S.
Hendricks County M. S.
Henry County M. S.
Howard County M. S.
Huntington County M. S.
Jackson County M. S.
Jay County M. S.
Jefferson County M. S.
Jennings County M. S.
Johnson County M. S.
Knox County M. S.
Kosciusko County M. S.
Lagrange County M. S.
Lake County M. S.
Laporte County M. S.
Lawrence County M. S.
Madison County M. S.
Marion County M. S.
Marshall County M. S.
Martin County M. S.
Miami County M. S.
Monroe County M. S.
Montgomery County M. S.
Morgan County M. S.
Newton County M. S.
Noble County M. S.
Orange County M. S.
Owen County M. S.
Parke County M. S.
Perry County M. S.
Pike County M. S.
Porter County M. S.
Posey County M. S.
Putnam County M. S.
Rush County M. S.
Randolph County M. S.
Ripley County M. S.
Shelby County M. S.
St. Joseph County M. S.
Steuben County M. S.
Sullivan County M. S.
Switzerland County M. S.
Tippecanoe County M. S.
Tipton County M. S.
Vanderburg County M. S.
Vigo County M. S.
Wabash County M. S.
Warrick County M. S.
Washington County M. S.
Wayne County M. J.
Wells County M. S.
White County M. S.
Whitley County M. S.

INDIAN TERRITORY.

Territorial Ass'n.

IOWA.

Iowa State M. S.
Austin Flint M. S.
Blackhawk County M. S.
Boone Valley M. S.
Botna Valley M. S.
Buchanan County M. S.
Buena Vista Co. M. S.
Cedar Rapids M. S.
Cedar Valley M. S.
Central District M. S.
Cherokee County M. S.
Clark County M. S.
Clinton County M. S.
Council Bluffs M. S.
Dallas County M. S.
Decatur Co. M. S.
Delaware County M. S.
Des Moines County M. S.
Des Moines Valley M. S.
Dubuque M. S.
Eastern Iowa M. S.
Fayette County M. S.
Fort Dodge M. S.
Fremont County M. S.
Gate City M. S.
Guthrie District M. S.
Hummiston & Shenandoah M.S.
Iowa Central M. S.
Iowa Union M. S.
Iowa and Illinois M. S.
Jasper County M. S.
Jefferson County M. S.
Johnson County M. S.
Julien M. S.
Julien Med. & Surg. Ass'n.
Keokuk County M. S.
Keokuk M. S.
Lyon County M. S.
Marion County M. S.
Missouri Valley M. S.
Mitchell County M. S.
Muscatine M. S.
North Iowa M. S.
Northwestern M. A.
Plymouth County M. S.
Pocahontas District M. S.
Polk County M. S.
Ringgold County M. S.
Scott County M. S.
Sioux City M. S.
Sioux Valley M. S.
Southeastern Iowa M. S.
Southwestern Iowa M. S.
Spirit Lake Med. Association.
Story County M. S.
Upper Des Moines M. A.
Wapello County M. S.
Wapsie Valley Med. Ass'n.
Warren County M. S.
Washington County M. S.
Winnebago County M. S.
Worth County M. S.

KANSAS.

Kansas State M. S.
Bourbon County M. S.
Golden Belt M. S.
Leavenworth County M. S.
Lyon Co. M. S.
South-East Kansas M. S.
N. W. Kansas M. S.
Shawnee Co. M. S.
Wyandotte M. S.

KENTUCKY.

Kentucky State M. S.
Anderson County M. S.
Bourbon Co. M. S.
Boyle County M. S.
Brashear M. S.
Breckenridge Co. M. S.
Carlisle County M. S.
Carter County M. S.
Central Kentucky M. S.
Clark County M. S.
Fulton County M. S.
Garrard County M. S.
Hardin County M. S.
Henderson County M. S.
Kentucky Valley County M. S.
Lexington and Fayette Counties M. S.
Lincoln County M. S.
Louisville Clinical Society.
Louisville M. S.
Marion County M. S.
Mason County M. S.
Midland District M. S.
Muhlenberg County M. S.
Muldraugh's Hill M. S.
Nelson County M. S.
Northeast Kentucky M. S.
Owensboro M. S.
Paducah M. and S. S.
Pulaski County M. S.
Scott County M. S.
Southeast Kentucky M. S.
Southwestern District M. S.
Union County M. S.

LOUISIANA.

Louisiana State M. S.
Attakapas M. S.
Avoyelles M. S.
Baton Rouge M. S.
Morehouse M. S.
N. Louisiana M. S.
Ouachitta M. S.
Orleans Parish M. S.
Shreveport M. S.
Tensas M. S.
Warren Stone M. S.

MAINE.

Maine State M. S.

MARYLAND.

Maryland Med. and Chir. Faculty (the State Society).
Baltimore Med. & Surg. A.
Clinical Society of Maryland.
Washington County M. S.

MASSACHUSETTS.

Massachusetts M. S.
Barnstable District M. S.
Berkshire District M. S.
Bristol North District M. S.
Bristol South District M. S.
Essex North District M. S.
Essex South District M. S.
Franklin District M. S.
Hampshire District M. S.
Hampden District M. S.
Middlesex South District M. S.
Middlesex East District M. S.
Middlesex North District M. S.
Norfolk District M. S.
Norfolk South District M. S.
Plymouth District M. S.
Suffolk District M. S.
Worcester District M. S.
Worcester North District M. S.

MICHIGAN.

Michigan State M. S.
Bay County M. S.
Berrien County M. S.
Calhoun County M. S.
Cheboygan County M. S.
Detroit Acad. of Med.
Detroit Gynecological Society.
Detroit M. S.
Grand Rapids Acad. of Med.
Grand River Valley M. S.
Kalamazoo Acad. of Med.
Marshall Acad. of Med.
Northeastern District M. S.
Pontiac M. S.
Upper Peninsula M. S.
Washtenaw County M. S.
Wayne County M. S.

MINNESOTA.

Albert Lea District M. S.
Cannon Valley M. S.
Crow River Valley M. S.
Fillmore County M. S.
Minneapolis Med. Club.
Minnesota Acad. of Med.
Minnesota Valley Med. Ass'n.
Hennepin County M. S.
Interurban M. S.
Olmstead County M. S.
Ramsey County M. S.
Southern Minnesota M. S.
South-Western Minn. M. S.
Steele Co. M. S.
St. Louis County M. S.
Wabasha County M. S.
Winona County M. S.

MISSISSIPPI.

Mississippi State M. S.

MISSOURI.

Missouri M. A.
Atchison County M. S.
Andrain Co. M. S.
Boone County M. S.
Buchanan County M. S.
Callaway County M. S.
Carroll County M. S.
Cedar County M. S.
Central Missouri District M. S.
Chariton County M. S.
Clay County M. S.
Dade County M. S.
Franklin County M. S.
Grand River District M. S.
Harrison County M. S.
Henry County M. S.
Hodgin M. A.
Howard County M. S.
Jackson County M. S.
Jasper County M. S.
John McDowell M. A.
Joplin Academy of Medicine.
Kansas City Acad. of Med.
Kansas City District M. S.
Lafayette County M. S.
Linton District M. S.
Lynn County M. A.
Macon County M. S.
Med. Society of the City Hospt. Alumni.
Missouri alley M. S.
Montgomery County M. S.
North Missouri District M. S.
Northeast Mo. Dist. M. S.
Northwest Missouri M. S.
Pettis County M. S.
Pike County M. S.
Putnum County M. S.
Rolla District M. S.
Saline County M. S.
Shelby County M. S.
Southeast Mo. Dist. M. A.
Southwest Mo. Dist. M. S.
Springfield M. S.
St. Louis Acad. of M. & S. Sci.
St. Louis M. S. of Missouri.
St. Charles County M. S.
St. Joseph M. S.

MONTANA.
Montana M. S.
Park County M. S.
Silver Bow County M. S.

NEBRASKA.
Nebraska State M. S.
Elkhorn Valley M. S.
Lincoln M. S.
Loup Valley District M. S.
Omaha M. S.
Otoe County M. S.
Southeastern Neb. M. S.
York County M. S.

NEVADA.
Nevada State M. S.

NEW HAMPSHIRE.
New Hampshire State M. S.
Carroll District M. S.
Central District M. S.
Cheshire County M. S.
Conn. River Valley M. S.
Manchester M. A.
Nashua M. A.
Rockingham District M. S.
Strafford District M. S.
White Mountain M. S.
White River District M. S.

NEW JERSEY.
New Jersey State M. S.
Atlantic County M. S.
Bergen County M. S.
Burlington County M. S.
Camden County M. S.
Cape May County M. S.
Cumberland County M. S.
Essex County M. S.
Gloucester County M. S.
Hudson County M. S.
Hunterdon County M. S.
Mercer County M. S.
Middlesex County M. S.
Monmouth County M. S.
Morris County M. S.
Passaic County M. S.
Salem County M. S.
Somerset County M. S.
Sussex County M. S.
Union County M. S.
Warren County M. S.

NEW MEXICO.
New Mexico M. S.
Bernalillo County M. S.

NEW YORK.
New York State M. A.
Chautauqua County M. A.
Cortland County M. A.
Erie County M. A.
Genesee County M. A.
Kings County M. A.
New York County M. A.
Oneida County M. A.
Orange County M. A.
Rensselaer County M. A.
Saratoga County M. A.
Sullivan County M. A.
Warren County M. A.
Westchester County M. A.
Wyoming County M. A.

NORTH CAROLINA.
North Carolina State M. S.
Buncombe County M. S.
Charlotte M. S.
Raleigh Acad. of Med.
Rowan County M. S.

NORTH DAKOTA.
North Dakota State M. S.

OHIO.
Ohio State M. S.
Adams County M. S.
Allen County M. S.
Ashland County M. S.
Ashtabula County M. S.
Belmont County M. S.
Brown County M. S.
Butler County M. S.
Central Ohio M. S.
Champaign County M. S.
Cincinnati Acad. of Med.
Clarke County M. S.
Clermont County M. S.
Cleveland M. S.
Clinton County M. S.
Columbus Acad. of Med.
Cuyahoga County M. S.
Darke County M. S.
Defiance County M. S.
Delaware County M. S.
Eastern Ohio M. S.
East Liverpool M. S.
Erie County M. S.
Gallia County M. S.
Greene County M. S.
Hancock County M. S.
Hempstead Mem. Acad.
Highland County M. S.
Holmes County M. S.
Jackson County M. S.
Jefferson County M. S.
Lorain County M. S.
Lucas County M. S.
Mahoning County M. S.
Mansfield Acad. of Med.
Marion County M. S.
Meiggs County M. S.
Miami County M. S.
Miami Valley M. S.
Montgomery County M. S.
Morrow County M. S.
Muskingum County M. S.
North Central Ohio M. S.
Northwestern Ohio M. A.
Perry County M. S.
Pike County M. S.
Portage County M. S.
Ross County M. S.
Shelby County M. S.
Springfield Acad. of Med.
Stark County M. S.
Stillwater M. A.
Toledo M. A.
Tuscarawas County M. S.
Union M. A.
Union M. A. of N. E. Ohio.
Warren County M. S.
Washington County M. S.
Wayne County M. S.

OKLAHOMA.
Oklahoma Territorial M. S.

OREGON.
Oregon State M. S.
Portland M. S.
South Oregon M. S.

PENNSYLVANIA.
Pennsylvania State M. S.
Allegheny County M. S.
Armstrong County M. S.
Beaver County M. S.
Bedford County M. S.
Berks County M. S.
Blair County M. S.
Bradford County M. S.
Bucks County M. S.
Butler County M. S.
Cambria County M. S.
Carbon County M. S.
Centre County M. S.
Chester County M. S.
Clarion County M. S.
Clearfield County M. S.
Clinton County M. S.
Columbia County M. S.
Crawford County M. S.
Cumberland County M. S.
Dauphin County M. S.
Delaware County M. S.
Elk County M. S.
Erie County M. S.
Fayette County M. S.
Franklin County M. S.
Greene County M. S.
Huntington County M. S.
Indiana County M. S.
Jefferson County M. S.
Juniata County M. S.
Lackawanna County M. S.
Lancaster County M. S.
Lawrence County M. S.
Lebanon County M. S.
Lehigh County M. S.
Luzerne County M. S.
Lycoming County M. S.
McKean County M. S.
Mercer County M. S.
Mifflin County M. S.
Montour County M. S.
Montgomery County M. S.
Northampton County M. S.
Perry County M. S.
Potter County M. S.
Philadelphia County M. S.
Schuylkill County M. S.
Somerset County M. S.
Susquehanna County M. S.
Tioga County M. S.
Venango County M. S.
Warren County M. S.
Washington County M. S.
Westmoreland County M. S.
York County M. S.

RHODE ISLAND.
Rhode Island State M. S.

SOUTH CAROLINA.
South Carolina State M. S.
Columbia M. S.
Anderson County M. S.
Greenville County M. S.
Laurens County M. S.
Kershaw County M. A.
Med. Soc. of S. Carolina.
Sumter County M. S.
Union County M. S.

SOUTH DAKOTA.
South Dakota State M. S.
Aberdeen District M. S.
Minnehaha M. S.
Sioux Valley M. S.

TENNESSEE.
Tennessee State M. S.
Bradley County M. S.
Bristol M. S.
Chattanooga M. S.
Dyer County M. S.
Gibson County M. S.
Johnson City M. S.
Knox County M. S.
Madison County M. S.
Marshall County M. S.
Memphis M. S.
Middle Tennessee M. S.
Montgomery County M. S.
Nashville Academy of Med.
Rutherford County M. S.
Sumner County M. S.
Tipton County M. S.
West Tenn. M. & S. Ass'n.

TEXAS.
Austin Academy of Medicine.
Austin District M. S.
Brazos Valley M. A.
Brenham M. S.
Bell County P. & S. Ass'n.
Briggs M. S., Ellis County.
Central Texas M. A.
Corsicana District M. A.
Dallas Med. & Surg. Society.
E. Texas Medico-Chirurgical S.
El Paso County M. S.
Hill County M. & S. Ass'n.
Houston District M. A.
Johnson County M. S.
Kaufman County M. S.
North Texas M. A.
Pan Handle M. A.
Practitioners' Soc. of Dallas.
South Texas M. A.
Waco M. A.
Western Texas M. A.

UTAH.
Utah State M. S.
Salt Lake County M. S.
Utah County M. S.
Salt Lake Acad. Med.
Weber County M. S.
Weber County Acad. of Med.

VERMONT.
Vermont State M. S.

VIRGINIA.
Virginia State M. S.

WASHINGTON.
Washington State M. S.
Kings County M. S.
Pierce County M. S.
Spokane County M. S.
Thurston County M. S.
Whitman County M. S.
Yakima County M. S.

WEST VIRGINIA.
West Virginia State M. S.
Charleston M. and S.
Harrison County M. S.
Huntington M. A.
McDowell County M. S.
Ohio County M. S.

WISCONSIN.
Wisconsin State M. S.
Ashland County M. S.
Barron County M. S.
Brainerd M. S.
Brown County M. S.
Central Wisconsin M. S.
Douglas County M. S.
Fox River Valley M. S.
Inter-County M. S.
La Crosse County M. S.
Manitowoc M. S.
Milwaukee M. S.
Northwestern Wis. M. A.
Sheboygan County M. S.
Waukesha County M. S.
Vernon County M. S.

WYOMING.
Wyoming State M. S.
Medical Ass'n of Hawaii.

Any society omitted should send to the office of the Secretary notice to that effect *accompanied by a certificate from the secretary of the State society that said society is so recognized in accordance with the above quoted law relating to representation.*

Secretaries of affiliated societies are earnestly requested to forward lists of their delegates to the AMERICAN MEDICAL ASSOCIATION as early as possible after appointment.

In order that the Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the secretaries are, by *special resolution*, requested to send to him, annually a corrected list of the membership of their respective societies.

GEORGE H. SIMMONS,
Secretary American Medical Association.
61 Market Street, Chicago.

To Commemorate Invention of Ophthalmoscope.

At the last meeting of the ophthalmic Section of the AMERICAN MEDICAL ASSOCIATION, the undersigned were appointed a committee to arrange exercises, etc., at the coming meeting in St. Paul, to commemorate the fiftieth anniversary of the invention of the ophthalmoscope. The Committee is preparing an historical exhibit of ophthalmoscopes and is endeavoring to secure such older models as they can borrow. Due credit will be given.—Harry Friedenwald, M.D., 1029 Madison avenue, Baltimore; Casey A. Wood, M.D., Chicago.

New Members.

New members for the month of March, 1901:

ALABAMA.

Davie, Judson, Cowikee P. O., Barbour Co.

CALIFORNIA.

Payne, Redmond Wellington, San Francisco.
Libby, Arthur A., Pasadena.
Roberts, Wm. Humes, Pasadena.

CONNECTICUT.

Roberts, Edw. K., New Haven.

DELAWARE.

Stubbs, Ralph P., Wilmington.

DISTRICT OF COLUMBIA.

Roman, F. O., Washington.

ILLINOIS.

Wells, Clarence A., Quincy.
Johnston, J. Alba, Byron.
Byrne, John H., Chicago.
Coakley, Walter Byron, Chicago.
Mix, Charles Louis, Chicago.
Saurenhaus, Ernest, Chicago.
Young, Alben, Chicago.
Peterson, Herman D., Chicago.
Lord, Frank H., Plano.
Beard, Leslie A., Polo.
Shreck, J. A., Cameron.
Crocker, Fletcher L., Weston.
Gillett, Philip F., Stillman Valley.
Maley, Wm. H., Galesburg.
Stephens, Robt. F., Toledo.
Johnson, Chas. B., Champaign.
Massie, John G., Belleville.
Fulgham, J. H., Lebanon.
Shaw, Viola E., Pekin.
Bridges, W. T., Stonington.

INDIANA.

McKee, Wm. Edwin, Goldsmith.

IOWA.

Davis, S. K., Libertyville.
York, N. Albert, Lisbon.
Daly, Jas. Jos., Charles City.
Grossman, D. S., Minburn.

KANSAS.

Allen, Arthur E., Utica.
Latta, John Milton, Millerton.
Welch, Wm. E., Pittsburg.

KENTUCKY.

Crouch, Hugh T., Cunningham.

LOUISIANA.

Lancaster, Nathan A., King, Madison Parish.
Owen, Whyte Glendower, White Castle.
Forman, Alfred Hennen, New Orleans.

MASSACHUSETTS.

Murphy, Jos. B., Taunton.
Thomas, Caroline L., Fall River.
Prior, Chas. E., Malden.
Trueman, H. S., Somerville.

MARYLAND.

Dorsey, Reuben M., Baltimore.
Russell, Wm. Wood, Baltimore.

MICHIGAN.

Stewart, Oliver, Port Huron.
Brown, G. Van Amber, McBain.
Hutchings, Willard Hunter, Ann Arbor.
Patterson, P. D., Charlotte.

MINNESOTA.

Wright, C. O., Luverne.
Steel, Edwin D., Mankato.
Williams, Cornelius, St. Paul.
Johnson, J. Palmer, Owatonna.
Hubert, R. I., St. Cloud.
Peterson, John Richard, Renville.
Heath, Albert C., St. Paul.
Dennis, Warren A., St. Paul.
Clark, Thos. C., Stillwater.
Gilfillan, Jas. S., St. Paul.
Milligan, W. F., Wabasha.
Frazer, Wm. A., Lyle.
Markoe, Jas. C., St. Paul.
Cross, J. G., Rochester.
Merrill, B. J., Stillwater.

MISSOURI.

Hempelmann, Louis H., St. Louis.
Banks, H. L., Hannibal.
Vessells, F. M., Brewer.
Bridges, J. B., Downing.
Rice, F. D., Lucerne.
Clark, Jos. Johnson, St. Louis.

NEW HAMPSHIRE.

Nute, W. H., Exeter.

NEW YORK.

Hirons, Gardner, New York City.
Hazeltine, Laban, Jamestown.
Greeley, Jane Lincoln, Jamestown.
Stranahan, J. Orley, Rome.
Edwards, John, Gloversville.
Earl, Wm. Petry, Little Falls.
Douglass, J. W., Boonville.
Munger, Chas., Knoxboro.
Douglass, Edgar H., Little Falls.
Steers, Wm. H., Brooklyn.
Disbrow, Robt. N., New York City.
Burgheim, Leo., New York City.
Burgess, Maynard G., Herkimer.
Clark, Jos., New York City.
Harding, Wm. L., New York City.
Leuchs, John, New York City.

NORTH DAKOTA.

Furness, Gilbert Bird, Mandan.
Critchfield, H. H., Hunter.

OHIO.

Hall, Emerson V., Convoy.
Glass, Geo. F., Cleveland.
Wirebaugh, I. V., Prairie Depot.

OKLAHOMA.

Buxton, L. Haynes, Oklahoma City.

PENNSYLVANIA.

Roe, J. I., Wilkesbarre.
Thompson, Mary Irvin, Altoona.
Matlack, Granville T., Wilkesbarre.
Harrison, Wm. H., Easton.
Sprowls, Jesse Addison, Clarksville.
Matthews, W. Edgar, Johnstown.

SOUTH CAROLINA.

Ferguson, Richard, Columbia.
Whaley, E. Mikell, Columbia.

SOUTH DAKOTA.

Carleton, J. W., Sisseton.

TENNESSEE.

Raymond, Frank S., Memphis.
Capps, Claudius Mead, Knoxville.
Fort, Rufus E., Nashville.

TEXAS.

Frick, Wm. G., Elk.
Rush, Richard Henry, DeLean.
Irby, Alfred, Weatherford.
Kennedy, John Wesley, Lewisville.
Crook, Lee F., Cresson.

WEST VIRGINIA.

Caldwell, Jos. R., West Liberty.

VIRGINIA.

Corss, Jas. Kennedy, Newport News.

WISCONSIN.

Shearer, Robt. D., Milwaukee.
Fox, Geo. Wm., Milwaukee.
Kleinhans, Francis A., Milwaukee.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Antisepsis of the Nasopharynx.

The *Presse Médicale*, quoted in *N. Y. Med. Jour.* for April 6, attributes the following prescriptions to M. Malherbe. They are to be used as anterior douches or by atomization:

Resolvent and antiseptic:

R.	Sodium salicylate	22½ gr.	86
	Distilled water	4500 m. 292	

M.

Resolvent, antiseptic, and astringent:

R.	Zinc sulphate	4½ gr.	29
	Distilled water	4500 m. 292	

M.

When there is much pain:

R.	Morphin. hydrochlorid.....	¾ gr.	048
	Distilled water	1250 m. 81	

M.

At the same time inhalations are prescribed:

R.	Compound tincture of benzoin....	1350 gr. 87	75
	Chloroform	25 drops 1	62

M. A coffeespoonful in a pint of boiling water.

Treatment of Uremic Coma.

A subscriber writes asking us for a "good plan of treatment in uremic coma."

ANS.—As this condition is due to poisonous substance in the blood the important point to observe in the treatment is to promote elimination. And as the kidneys are crippled we must look to increased action of the bowels and skin as the two other great emunctories through which rapid elimination can be carried on. Consequently diaphoresis and catharsis must be increased. The action of the skin must be increased by means of the hot pack, hot air or vapor baths. In general practice the hot pack is most suitable and most conveniently employed. Place the patient on a couch or bed protected by a rubber sheet after having removed all the clothing. Place blankets in hot water, 110 F., wring them out and wrap one around each limb and one around the body, and over these place a dry blanket and allow the patient to remain at least one hour. During this procedure an ice cap should be placed to the head to prevent cerebral congestion. Injection hypodermically of the normal salt solution into the cellular tissue is of great aid to elimination, as well as to the overworked heart. A pint or even two pints may be slowly injected at one time, and if it is not convenient to administer it hypodermically, large amounts can be slowly injected per rectum.

To meet the second indication, namely elimination by the bowels, free catharsis is most rapidly produced by the use of croton oil; this can be given in one or two minim doses either dropped upon the base of the tongue or administered in a teaspoonful of olive oil. Elaterium in ¼-grain doses administered, as Hirst states, in a little butter with which it is well mixed; or elaterin, its active principle, may be substituted, administered in 1/15 to 1/10 grain doses every hour for three hours will usually produce efficient purging necessary in these cases. The number of doses should not necessarily be limited to three, but should be administered until the desired results are obtained. To give it at longer intervals and in too small doses is of no use, as it does not produce the catharsis desired. H. B. Favill, of Chicago, states there may be physicians who object to such large doses on account of its depressing and exhausting effects, yet a patient who is weakened to the point of being harmed is beyond help anyway. Experience has demonstrated that its value is not mechanical alone but rapidly relieves the toxic condition of the blood as well as the symptoms which the toxicity produces as shown upon the heart and respiration.

Pilocarpin, to produce diaphoresis, is an inappropriate remedy on account of its marked depressant effects upon the

heart. Its use in puerperal eclampsia has no doubt increased the mortality; especially is it non-indicated in the uremia of Bright's disease, for under such conditions the heart muscle is necessarily more or less affected and its cavities dilated.

For the Heart and Circulation.

Where there is such work thrown upon the heart by congestion of the pulmonary circuit, or when the heart begins to succumb to the poisonous effect of the toxins it can be relieved by venesection—which can not as often be resorted to as it should be under such circumstances—and phlebotomy should be done as a preventive measure before marked pulmonary edema comes on. It is frequently the case that nitroglycerin will be a good substitute for venesection, as the principal action of the nitrites is to dilate the peripheral blood vessels, and in that way they greatly reduce the amount of work thrown upon the heart. Too many practitioners have an erroneous idea of the physiological action of the nitrites. They administer them for the purpose of stimulating the heart, at the same time not knowing in what way it stimulates the heart, the action of which is indirect by relieving its load. Alternating with the nitroglycerin, digitalis may be given, if the pulse is feeble, in moderate sized doses providing there is no fatty degeneration of that organ present. The most frequent mistake in the administration of digitalis is in giving it in too large doses. Caffein in uremia makes an excellent heart tonic as well as a diuretic. It can be given hypodermically.

Treatment of Diphtheria.

J. Weichselbaum, in *Merck's Archives*, recommends the use of hydrargyri biniodidum in treatment of diphtheria. He begins by administering a mercurial purgative. He then gives the following preparation internally:

R.	Hydrarg. iodidi rubri	gr. i	06
	Potassii iodidi	gr. iv	25
	Aquæ	ʒi	4

Dissolve and add:

	Syr. acidi hydrioid q. s. ad	ʒiv	128

M. Sig.: Five to ten drops on the tongue every twenty minutes, day and night.

For use in the atomizer as a local application to the fauces:

R.	Hydrogeni peroxidi	ʒi	32
	Aquæ	ʒiii	96

M. Sig.: As a spray locally every hour or two. If the patient is old enough let him gargle every hour during day and night.

And internally:

R.	Quininæ sulphatis	gr. xlviii	3 | 20
	Ext. glycyrrhizæ flu.	ʒi	32
	Aq. cinnamomi q. s. ad	ʒiv	128

M. Sig.: Shake and take a teaspoonful every two hours during day and night.

Treatment of Vaginitis.

R.	Resorcin	gr. lxxx	5
	Acidi salicylici	gr. viii	5
	Beta naphthol	gr. i	06
	Aquæ q. s. ad	ʒviii	256

M. Sig.: Add one tablespoonful to a quart of warm water and use as a douche.

After the administration of the douche insert a tampon saturated with the following solution:

R.	Salol	gr. xlv-ʒii	3-8
	Glycerini (neutral)	ʒviii	256

And insert a vaginal suppository containing the following:

R.	Acetanilidi	gr. xv	1
	Acidi tannici	gr. viii	5
	Ext. hyoscyami	gr. iv	25
	Sacch. lactis	ʒvi	24

M. Ft. Suppos. No. i. Sig.: Insert into the vagina.—*Med. News.*

The mucous membrane of the vagina is a good absorbent and it seems that the amount of acetanilid and hyoscyamus is too large. Good effects should be obtained from one-half the dose given in the above formula.

Treatment of Purulent Endometritis.

Dr. Jay G. Roberts, in *Phil. Med. Jour.*, uses the following emulsion in treatment of purulent endometritis:

R.	Iodoformi	ʒss	2
	Amyli	gr. xv	1

Mix and add:

	Glycerini	ʒv	20
	Aquæ	ʒiii	12
	Creolini	gr. v	30

M. Stir gradually and heat slightly. Sig.: Inject one teaspoonful slowly, well up into the uterine cavity. The syringe is withdrawn and the cervix plugged with antiseptic cotton. The patient should retain the dorsal position for a few minutes. The injection should be repeated every other day or every third day.

For Painful Dentition.

The *Med. Chir. Centralblatt* contains the following prescription for local application in painful dentition:

R.	Acidi citrici	gr. i	06
	Aq. destil. q. s. to dissolve		
	Cocainæ hydrochlor	gr. iss	09
	Tinct. vanillæ	m. x	66
	Syrupi simplicis	ʒv	20

M. Sig.: To be rubbed on the gums.

Bleeding and Tender Gums.

R.	Gelatin	ʒss	2
	Sodii chloridi	gr. viii	5
	Acidi carbol	gr. ii	12
	Eucainæ B hydrochlor	gr. viii	5
	Cocainæ hydrochlor	gr. ii	12
	Aq. destil	ʒiiiss	112

M. Sig.: Use as a mouth wash once or twice daily.

Treatment of Anorexia.

Kolb, in *Prog. Medicale*, recommends the following powder containing the bitters quassia and nux vomica:

R.	Quassin (crys.)	gr. 3/100	0018
	Pulv. nucis vomicæ	gr. 3/10	018
	Pulv. rhei	gr. iiss	15

M. Ft. wafer No. i Sig.: One such powder before each meal.

Treatment of Chronic Eczema and Psoriasis.

R.	Creolin	ʒss	2
	Hydrarg. Ammon	gr. x	66
	Petrolati	ʒi	32

M. Sig.: Apply locally night and morning.

Local Application for Eczema.

R.	Pulv. tragacanthæ	gr. xxv	1 | 66
	Zinci oxidi	ʒii	8
	Alcoholis	ʒi	4
	Lanolini	ʒi	32
	Aquæ	ʒiv	128

M. Sig.: Apply locally.—*Western Druggist.*

Treatment of Fatty Heart.

Dr. A. Robin, in *Med. Record*, suggests the following pill in treatment of fatty degeneration of the heart:

R.	Sodii arsenatis	gr. 1/24	0025
	Potassii iodidi	gr. ¾	05
	Pulv. nucis vom.	gr. ⅛	008
	Pulv. rhei	gr. i	06
	Ext. dulcamaræ	gr. iss	09

M. Ft. pil. No. i. Sig.: One such pill daily.

The extract of dulcamara (bittersweet) is not official and its dose seems to be uncertain.

Treatment of Subacute Rheumatism.

R.	Sodii salicylatis	ʒss	16
	Potassii iodidi	ʒi	4
	Methyl salicylatis	ʒi	4
	Ext. cimicifugæ flu.	ʒii	8
	Alcoholis	ʒss	16
	Aquæ q. s. ad	ʒiii	96

M. Sig.: One teaspoonful three times a day; or:

R.	Sodii salicylatis Potassii iodidi, Potassii acetatis Ext. cascaræ sagradæ Glycerini āā	℥ii	8
	Aq. cinnamomi	℥ss	16
	Aq. menthæ pip	℥iii	96

M. Sig.: One teaspoonful every four hours.—*Med. Standard.*

For the **Night Sweats of Tuberculosis or Malaria.**

R.	Acidi salicylici	℥i	4
	Acidi borici	℥i	4
	Amyli	℥iv	16
	Pulv. talci	℥iss	48

Misce. Sig.: To be used locally as a dusting powder.

Nasal Neurosis.

Dr. Samuel B. Dabney states that in women having frequent attacks of sneezing both summer and winter and where examination shows no hypertrophy nor permanent obstruction present, but simply a turgescence of the mucous membrane, he uses the following combination:

R.	Acidi arsenosi	gr. i	06
	Strych. sulphatis	gr. 2/3	04
	Ext. belladonnæ Zinci phosphidi āā	gr. iv	25
	Ext. gentianæ	gr. xx	1 33

M. Ft. pil. No. xx. Sig.: One pill three times a day.

In conjunction with this he uses a menthol preparation locally.

Sterilizing the Clinical Thermometer.

It is too often the case that the general practitioner does not give the proper attention to sterilizing his thermometer. When he enters a sick room he usually asks for a towel moistened with some water and is satisfied with washing the thermometer in water alone.

Dr. Wm. H. Dyer, in *Phil. Med. Jour.*, suggests that a few drops of formalin —40 per cent. solution of formaldehyde—be placed on some cotton in the bottom of the thermometer case, which affords a very effective method of disinfecting and sterilizing the thermometer. The gas is readily liberated from the solution and the thermometer case being air-tight practically prevents the escape of the gas and the evaporation of the liquid. In this way the thermometer is subjected to the germicidal action of the gas. Before placing it in the patient's mouth it should be rinsed in water and dried, as formaldehyde is irritating to the mucous membranes.

Medicolegal.

Conviction on Testimony of Expert Witnesses.—Where a conviction is had upon the testimony of expert witnesses, if the jury has been properly instructed as to the law, the Supreme Court of Oklahoma says, in Boggs, vs. United States, that, on appeal it will not invade the province of the jury, to, determine the weight and credibility of the witnesses or the degree of credence to be given to their testimony. So, if upon an examination of the entire record it is satisfied that there is evidence in the case which reasonably tends to sustain the findings of the jury, the verdict of the latter will not be disturbed.

Manslaughter by Administration of Poison.—The Supreme Court of Indiana says, in the case of Hasenfuss vs. State, that it is possibly true, as insisted by counsel, that it may be difficult to conjecture a case where the crime of manslaughter can be said to be committed by means of administering poison. Nevertheless, it holds valid a verdict of the jury which showed that the jury here discovered such a case notwithstanding the assertion of counsel that none, under any circumstances, could be imagined, or possibly had been controlled, as is sometimes the case, more by the impulses of mercy than by the law and the evidence.

Rules as to Admissibility of Opinions of Experts.—In the case of Easler vs. Southern Railway Company, the Supreme Court of South Carolina, without undertaking to review in detail the different cases in that state upon this subject, thus states the rules that have been followed: 1. A witness is competent to give his opinion as an expert when the facts upon which it is based are within his own knowledge. 2. If the facts upon which his opinion is founded are in issue, his testimony is not admissible, except upon a hypothetical state of facts. 3. If the mode in which an injury was inflicted, or the extent thereof, is itself one of the disputed facts in the case, the witness will not be allowed to testify that in his opinion the injury was inflicted in a certain manner or to a certain extent. In such a case he must testify as to a hypothetical state of facts. The province of the expert is to draw inferences from, but not to decide, the facts of the case; and, in order to draw proper inferences from the facts in the case, they must either be within his own knowledge or undisputed; otherwise, he would usurp the powers of the jury.

Appointment of Examiners by Association.—The Supreme Court of Indiana holds, in Overshiner vs. State, that the general assembly, in conferring upon the State Dental Association power to appoint three members of the State Board of Dental Examiners, did not transcend its constitutional power, and that appointments to said Board of Examiners by said Association are valid. It was contended, for one thing, that the statute must fail for the reason that the legislature had no constitutional warrant for bestowing police powers upon a private corporation, to be by it exercised upon the citizens of the state. But the supreme court says that it perceives no reason why a corporation, such as the one in question, may not prove itself a repository of power as safe and salutary as an individual. This corporation is composed of practicing dentists, organized for the promotion of scientific knowledge and skill in the practice of the profession of dentistry, and which association thus stands in an intimate and well-informed relation to the subject, and possessed of a peculiar interest in the successful administration of the law. It is difficult to conceive of an appointing power with higher qualifications, or likely to be swayed by more laudable motives; and that it is an organization of persons mutually interested in the enforcement and proper administration of the law surely furnishes no reason for its condemnation.

Liability for Unjustifiable Abandonment of Patient.—The Supreme Court of California says that defendant, in the case of Lathrop vs. Flood, was a practicing physician, who was employed to attend a young married woman in her prospective first confinement. At the beginning of her labor, he was sent for and attended. He concluded that the case would be a prolonged one, and went away, visiting the house at intervals. He returned one evening, and, after an examination of his patient, decided that it would be necessary to employ instruments to aid in the delivery of the child, and that the time for the use of such instruments had arrived. He, therefore, ordered the attendant nurse to place the patient in proper position, and inserted the instruments, whereupon the sick woman, in fear, or pain, or both, shrank back, compelling the physician to let go of the instrument or greatly imperil the lives of both mother and child. He made a second effort with like result, and perhaps a third, though that was in controversy. He testified that he warned the woman to be quiet, and explained to her the danger, both to herself and unborn infant, occasioned by her conduct, and finally told her that, if she "did not quit, he would quit." Upon the part of the woman the evidence was that she was suffering excruciating pain, which was increased by the insertion of the instruments; that she screamed, whereupon the doctor said: "You quit your screaming. If you don't quit, I'll quit." Upon the failure of a second or third effort to employ instruments, he abruptly left the house, without a word of explanation or suggestion to any one. This was about midnight. The husband followed him to the street, imploring him to return, and not to leave his wife in that condition, but he refused. After an interval of an hour or more, during which time the patient was left with knowledge

that the physician had abandoned her, and without any medical attendance, the presence of another physician was secured. He found her not so far advanced in parturition as to require the use of instruments until some six or eight hours afterwards, when, by their aid, he delivered her of an infant, which lived about eight minutes. It did not appear that the first physician's treatment of the case up to the time of his abandonment of it was either negligent or unskilful, while it was demonstrated that if either the mother or the child suffered from undue physical injuries inflicted by his treatment that the actuating cause was the conduct of the patient in moving and shrinking while the instruments were actually inserted. The jury returned a verdict for $2000 damages, and the supreme court says that it can perceive nothing excessive in that, and nothing to indicate that the jury must have been influenced by passion or prejudice. It says that the law has no scales by which to measure with exactness such mental suffering as the woman endured after the doctor's departure and the reflex effect of such mental suffering upon the physical condition. The jury, for the injuries suffered, was instructed that in fixing compensatory damages it was to take into consideration the physical injury and suffering and the mental suffering and humiliation, if any, caused by the physician's negligent act or breach of contract. It is the undoubted law, the court says, that a physician may elect whether or not he will give his services to a case, but, having accepted his employment, and entered upon the discharge of his duties, he is bound to devote to the patient his best skill and attention, and to abandon the case only under one of two conditions: First, where the contract is terminated by the employer, which termination may be made immediate; second, where it is terminated by the physician, which can only be done after due notice, and an ample opportunity afforded to secure the presence of other medical attendance. Much expert testimony was given by physicians in this case to the effect that the relation of confidence between physician and patient is all-important, and that a physician is justified in abandoning a case where that relationship does not exist. This, the court says, is quite true, but the circumstances of abandonment are equally important. He can never be justified in abandoning it as did this defendant. Such conduct evidence a wanton disregard, not only of professional ethics, but of the terms of his actual contract. It was a violation of that contract, and for all damages that resulted he was justly responsible.

Current Medical Literature

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, March 30.

1 *Congenital Dislocation of the Shoulder with Report of Two Cases of Dislocation Posteriorly. (Concluded.) Daniel W. Marston.
2 Pathology of Intrauterine Death. (Continued.) Neil MacPhatter.
3 *Comparative Pathology of the Jews. (To be Concluded.) Maurice Fishberg.
4 Causes and Significance of the Obstetric Hemorrhages. J. Clifton Edgar.
5 *Tropical Dysenteries. Stephen M. Long.
6 A Dressing for Colle's Fracture. Charles L. DeMeritt.
7 A Requisite to Increase the Usefulness of Ambulances. Frederic Griffith.

Boston Medical and Surgical Journal, March 28.

8 *The Embryologic Basis of Pathology. Charles Sedgwick Minot.
9 *New Method for Treating Fractures. Leonard F. Hatch.
10 Mumps in Pneumonia; Boroglyceride. Charles W. Dulles.
11 Brief Summary of Nine Cases of Lobar Pneumonia Treated by Ice Pack. George L. Collins.

Philadelphia Medical Journal, March 30.

12 *Atmokausis: Its Value in the Treatment of Severe and Uncontrollable Uterine Bleedings (Uterine Arteriosclerosis). Samuel W. Bandler.
13 *Coexistence of Carcinoma and Fibroma in the Corpus Uteri. W. A. Newman Dorland.
14 *Shock in Abdominal Operations. Fenton B. Turck.
15 *Practical Modification of the Phenylhydrazin Test for Glycosuria. Robert N. Willson.
16 *How to Prevent Stammering. G. Hudson Makuen.
17 Bell's Palsy Associated with Complete Anesthesia in the Territory of the Fifth Nerve. James Hendric Lloyd.

Medical Record (N. Y.), March 30.

18 *Some Fallacies of Therapeutics. George L. Peabody.
19 *Ionization in its Physiological and Pathological Relations. Martin H. Fischer.
20 Creosote in Pneumonia: A Résumé. I. L. Van Zant.
21 Orchid Culture in its Relation to a New Improved, and Completely Effective Method of Disinfection. J. M. W. Kitchen.

St. Louis Medical Review, March 23.

22 *Veratrum Viride; its Undeserved Neglect. E. W. Saunders.

March 30.

23 Report of Fatal Heart Complication of a Case of Acute Articular Rheumatism in a Child. Hudson Talbott.
24 Emergency Hospital at the Pan-American. Herbert Shaerer.

Medical News (N. Y.), March 30.

25 Report of the Committee of the Medical Board of Bellevue Hospital, Appointed January 2, 1901, to Investigate and Report upon Questions Relating to the General Administration of the Hospital.
26 *Vaccination, Clinically Considered. Frank S. Fielder.
27 The Method of Preparation of Vaccin Virus in the Vaccin Laboratory of the New York City Health Department. J. H. Huddleston.

Cincinnati Lancet-Clinic, March 30.

28 Valedictory Address at Fort Wayne College of Medicine. H. V. Sweringen.
29 Valedictory Address at Academy of Medicine of Cincinnati. Chas. L. Bonifield.
30 Appendicitis. John A. Grafft.
31 Oxygen Gas in Opium Poisoning. W. P. Orr.

Pediatrics (N. Y.), March 15.

32 *Diphtheria and its Treatment. Charles C. Gidney.
33 *Mixed Feeding of Infants. John Zahorsky.
34 Bullet in the Foot Located by the X-Ray Operation—Subluxation of the Knee. James M. Holloway.
35 *Treatment of Burns in Infancy and Childhood. Charles Warrenne Allen.

American Practitioner and News (Louisville, Ky.), March 1.

36 Tumors of Testicle. John R. Wathen.
37 Fracture of the Neck of the Femur. Irvin Abell.
38 Correction of Deviations of the Cartilaginous Nasal Septum. Thomas C. Evans.

Northwestern Lancet (Minneapolis, Minn.), March 15.

39 *A New Treatment for Tuberculosis. O. A. Fliesburg.
40 *The Influence of Sex and of Certain Physiologic and Pathologic Changes of the Sexual Organs upon the Eye. Howard McI. Morton.
41 *Two Cases of Poisoning by Potassium Iodid. Arthur T. Mann.

Medical and Surgical Monitor (Indianapolis), March 15.

42 Premature Burial. Noah E. Aronstam and Louis J. Rosenberg.
43 Climate of Florida, and the Diseases that may be Benefited by It. William B. Fletcher.

Kansas City Medical Record, March.

44 Follicular Tonsillitis. Geo. A. Hewitt.
45 Sleeplessness in Heart Disease and its Treatment. C. C. Gibbes.

Albany Medical Annals, April.

46 *Ectopic Pregnancy: Primary Rupture the Opportune Time for Making Diagnosis. George McNaughton.
47 *Lack of Uniformity in Prescribing Myopic Glasses. S. Busby Allen.
48 *The Early Recognition of Malignant Growths. Edgar A. Vander Veer.

Occidental Medical Times (San Francisco), March.

49 Simple Garbage Incinerator and Crematory—On Improved Form of Apparatus for Regenerating Formaldehyde Gas. J. J. Kinyoun.
50 What Should Be Done with Chinatown? Douglas W. Montgomery.
51 *Bacteriologic Diagnosis of Diphtheria. W. H. Kellogg.
52 *Sequelæ of Diphtheria. Wm. Fitch Cheney.
53 *Specific Treatment of Diphtheria. George H. Evans.
54 Caseous Degeneration of the Mediastinal Glands: Operation. Recovery. W. S. Thorne.

Merck's Archives (N. Y.), March.

55 Treatment of Headache. L. Harrison Mettler.
56 Use of Ice Per Rectum in Narcotic Poisoning. Willis Cummings.
57 Sulphur and its Derivatives. J. H. Jackson.

Indiana Medical Journal (Indianapolis), March.

58 Influenza, with Special Reference to Ethmoidal Cells and Middle-Ear Complications. John J. Kyle.
59 Post-operative Ventral Hernia. Robert T. Morris.
60 Antitoxin in Diphtheria. Edwin Rosenthal.
61 *Mechanical Effects of Nasal Obstruction. Frank A. Morrison.

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62 Case of Choledochotomy for the Removal of Impacted Stones. Howard Lilienthal.
63 Anchylostomiasis. J. H. Dyer.
64 Doctresses of Medicine. T. C. Minor.
65 *New Methods for the Application of Old Principles in Treatment of Fractures and Deformities of Limbs. James G. Hughes.

Obstetrics (N. Y.), March.

66 Pregnancy in Accessory Horn in Uterus Duplex. Erwin Kehrer.
67 Obstetrical Nursing. Louis F. Bishop.
68 Ectopic Gestation—Report of Cases. J. E. Gilcreest.

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69 Ueber die Beziehungen des Hausarztes zu seinen geisteskranken Patienten. George W. Jacoby.
70 Ueber Sklerema neonatorum. C. Schmitz.
71 Tuberculose der Tonsillen. Behandlung der Lungen-tuberculose mit electrischem Licht und Sauerstoff. W. Freudenthal.
72 Ein Aufruf zur Grundung einer Deutschen Lungen-Heilstatte für Gross New York als Zweig der New Yorker und Brooklyner Deutschen Hospitaler. S. A. Knopf.

Archives of Otology (N. Y.), February.

73 On the Hearing of Cerebral Abscesses. Prof. Passow.
74 *Non-operative Cases of Acute Inflammation of the Mastoid Cells. Gorham Bacon.
75 Otitis Abscess of the Temporal Lobe. Herman Preysing.
76 Three Cases Operated upon for Otitic Abscess of the Temporal Lobe, with Fatal Result. F. Ropke.
77 Report of the Progress in Otology for the Second Quarter of 1900. A. Hartmann.

Bulletin of Cleveland General Hospital, October, 1900.

78 Fractures of the Pelvis with Injuries to its Contents. Joseph F. Hobson.
79 Amyloid Kidney. Alfred S. Maschke.
80 Spontaneous Rupture of the Uterus at Three Months. N. Stone Scott.
81 Notes of a Case of Heart Disease. W. J. Scott.
82 Local Use of Normal Saline Solution. Frederick C. Taylor.
83 Glioma of Retina. Wm. E. Shackleton.

University of Pennsylvania Medical Bulletin (Philadelphia), March.

84 A Series of Twelve Articles on Medical Men Prominent in the Civil and Military Affairs of Revolutionary Times. Francis R. Packard.
85 *The Treatment of Trifacial Neuralgia, with Report of a Case of Evulsion of the Second and Third Divisions of the Gasserian Ganglion. J. Wiliam White.
86 *Value of the Tuberculin Test in the Recognition of Latency or Quiescence in Tuberculosis of the Bones and Joints. A Preliminary Report. Charles H. Frazier and Montgomery H. Biggs.
87 Digest of Recent Literature upon Perforation of the Intestine in Typhoid Fever. John H. Jopson.

Iowa Medical Journal (Des Moines), March 15.

88 Hygiene from a Medical Standpoint. J. C. Shrader.
89 The Symptomatology and Prophylaxis of Smallpox. N. C. Schlitz.
90 Some Observations on Smallpox. V. L. Trynor.

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91 Results Following the Cure of Chronic Defects of the Vesical Function. Eugene Fuller.
92 Some Recent Researches in Rheumatic Fever, with Remarks on Internal Antisepsis. L. T. Riesmeyer.
93 Cilia in the Anterior Chamber. A. E. Ewing.
94 Selection and Administration of Anesthetics. Alfred Roulet.
95 Report of a Case of Articular Rheumatism with Fatal Heart Complications in a Child. Hudson Talbott.
96 Points of Interest Gathered from Eastern Hospitals. Frank G. Nifong.

Archives of Pediatrics (N. Y.), March.

97 *Hemorrhage into the Suprarenal Capsule in Still-Born Children and Infants: Report of a Case Showing Rupture of the Sac and Escape of Blood into the Perineal Tissues and the Peritoneal Cavity. (Concluded). S. McC. Hamill.
98 *The Diagnosis and Treatment of Adenoids by the General Practitioner. Francis Huber.
99 *Some Observations upon the Temperatures of Apparently Healthy Children; An Experimental Study. W. M. Donald.
100 Case of Apparent Recovery from a Congenital Abnormality of the Heart. John Thomson.
101 Tumor of the Cerebellum in a Boy of Seven Years. S. Rush Ketcham and Luther C. Peter.
102 Report of a Case of Diabetes in an Infant. William E. Young.

American Journal of Surgery and Gynecology (St. Louis, Mo.), March.

103 *Surgical and Pathologic Observations on Epityphilitic Abscess. Augustus C. Bernays.
104 Significance of Hematuria. J. Block.
105 Operative Treatment of Large Pharyngeal Tumors. J. F. Binnie.
106 *A Case of Intermittent Hydrops of the Knee. Geo. W. Cale, Jr.
107 Neuroepithelioma (Glioma) of the Retina; and its Surgical Treatment. James Moores Ball.
108 *Consideration of the Different Operative Procedures in the Treatment of Retrodisplacements of the Uterus. O. Beverly Campbell.
109 Removal of a Pregnant Uterus for Infected Placenta Previa Centralis. Emory Lanphear.

Therapeutic Gazette (Detroit, Mich.) March 15.

110 *Nitrate of Silver and Other Salts of Silver in the Treatment of Inflammation of the Mucous Membrane of the Upper Respiratory Tract. E. B. Gleason.
111 *Post-operative Pneumonia Complicated by Empyema, with Remarks on the Proper Treatment of this Condition. Philip Marvel.
112 *Chloretone in Dusting Powders. E. Hillingsworth Siter.
113 As to that Important Function of the Blood in Health, its Alkaline Reaction and the Reduction of its Alkalinity in Certain Pathologic Conditions. R. Wernigk.
114 *Notes on a Case of Pemphigus, Particularly in Connection with the Local Treatment. Arthur Van Harlingen.
115 Gastric Ulcer: Its Etiology, Symptomatology, and Diagnosis, with Special Reference to Treatment. D. D. Stewart.

Pacific Medical Journal (San Francisco), March.

116 Epilepsy. J. R. Curnow.
117 Necessity for More Thorough Training in Nervous and Mental Diseases in Medical Schools. E. W. King.
118 Diseases of Digestive Organs. A. W. Perry.
119 Relation of Drinking Water to Disease. Winslow Anderson.
120 Culture of American Ginseng. Harlan P. Kelsey.
121 Opium Poisoning Treated with Permanganate of Potassium, Eustorjio Calderon.

New England Medical Monthly (Danbury, Conn.), March.

122 Differentiation of the Impersonal and Personal in Medical Thought and Art. W. B. Konkle.
123 Amenorrhea and Emmenagogues. J. Alexander Wade.
124 Treatment of Bronchitis. I. N. Love.
125 Prophylactic and Curative Action of Urotropin. Dr. Zaudy.
126 *Treatment of Reflex Neuroses from Disturbed Pelvic Mechanism. Byron Robinson.
127 Uric Acid Diathesis—Its Treatment. O. L. Suggett.
128 Laryngo-trachitis Membranoso. Warwick M. Cowgill.
129 Suggestions, Theoretical, and Clinical, Concerning the Use of Oil as a Reconstructive in the Treatment of Bottle-fed Infants During Convalescence from Wasting Diseases. E. C. Collins.
130 Pulmonary Surgery. J. Murray Johnson.
131 Representative Cases Illustrating the Clinical Value of Cod-Liver Oil in Tubercular Inflammations. H. Y. Ostrander.

Dominion Medical Monthly (Toronto), March.

132 Medical Folk Lore in India. R. D. Rudolf.
133 *The Vicarious Absorption of Oxygen in Pulmonary Obstruction. Perry E. Doolittle.
134 Carbolic Acid Poisoning: A Medicolegal Case. George Elliott.
135 A Case of Pyonephrosis. Walter McKeown.

Alabama Medical Journal (Birmingham), March.

136 Cesarean Section as an Operation of Election. With the Report on a Case. Lewis C. Morris.
137 Intubation and Antitoxin. S. L. Ledbetter.
138 Amputation Above the Knee Under Analgesia from Spinal Subarachnoidean Cocainization. Reported by C. A. Fox.

Georgia Journal of Medicine and Surgery (Savannah), March.

139 Plea for Early Operation in Ovaritis Followed by Epileptiform Attacks. W. Hutson Ford.
140 Heroin Hydrochlorid as a Remedy in Coughs. W. E. Fitch.
141 Movable Kidney. R. L. Payne.

Texas Medical Journal (Austin), March.

142 Roberts-Hawley Goat Lymph Compound. Willis P. King.
143 Catarrhal Fever. J. M. Colley.
144 Chloretone as a Sedative in Gastric and Cystic Irritability. C. F. Darnell.

Vermont Medical Monthly (Burlington), January.

145 *Lobar Pneumonia. W. L. Heath.

AMERICAN.

1. **Congenital Shoulder Dislocation.**—This article is in substance similar to the article abstracted in THE JOURNAL of April 6, ¶118, p. 996.

3. **Comparative Pathology of Jews.**—Fishberg gives statistics showing the alleged freedom of the Jews from certain diseases such as syphilis, tuberculosis, etc., and their greater longevity over other classes. He also notices their special liabilities to diabetes and nervous and mental diseases.

5. **Tropical Dysenteries.**—The different forms of dysentery as they appear in the Philippine Islands are described by Long, who recognizes five types: The first, the fulminating catar-

rhal dysentery, is the most fatal of them all. The patients usually die in from four to seven or eleven days. The cause is usually ascribed to Shiga's bacillus. The attack occurs suddenly with high temperature, rapid pulse, flushed face, coated tongue, great prostration, immense number of bowel movements, becoming bloody and slimy, abdominal tenderness, vomiting, etc. The mesenteric glands are enlarged, the disease is confined chiefly to the large intestines so that the whole or practically the whole colonic tract seems to be one homogeneous necrotic mass. Treatment has been altogether unavailing. The second type is simply acute dysentery, starting as a diarrhea and often associated with malaria. There is no rise of temperature to speak of, slight abdominal tenderness and some tenesmus. The cases are easy to cure in the beginning, but are liable to become chronic. The third type, generally called the amebic, can be divided into four different classes: The amebic, the trichomonadic, the cercomonadic, and the mixed type. The amebic dysentery is one of the most prevalent, occurs suddenly, without warning, and is hard to cure. The fulminating type excepted, it is the worst of all dysenteries, becoming a mixed type in its chronic stage. It has a tendency to become chronic and is specially prone to cause liver abscesses. It kills either by perforating ulcer or excessive toxemia, by metastatic abscesses, especially in the lungs, and by paralysis of the intestine, or inanition. The trichomonas type is obstinate to treatment and often becomes chronic. The cercomonas type is deadly when associated with streptococcus, and the mixed is fatal on account of its complications. The fourth type of dysentery is the chronic dysentery so-called, though usually a sequel of the acute and amebic forms. The fifth type is gangrenous and diphtheritic, usually fatal from perforation and general peritonitis or toxemia. In these cases the patient passes large shreds of membrane. There is often persistent vomiting and agonizing pain and tenderness. The sequelæ of dysentery met with in the Philippines are numerous. The chronic form is followed by gastric disorders, acute constipation, intestinal paralysis, anemia, typhoid, neuritis, liver and kidney disease, abscess, etc. Most liver abscess patients die. The best prophylaxis is to avoid eating or drinking anything which has not been thoroughly disinfected by boiling or cooking. Alcohol is, in Long's opinion, bad for the condition, excepting with caution in the chronic stages of the disease. One thing should be remembered in the tropics, that a purgative is advisable every two weeks if the bowels are sluggish. Exposure to the sun in the hotter part of the day and exposure to the night air should be avoided. Four drugs are mentioned as specially valuable; 80 per cent. of the patients will be cured if these are properly used. One ounce of sulphate of magnesium in one-half a glass of warm water before breakfast, repeating it later in the day if necessary, will cure many cases, or small repeated doses of calomel may fulfill the same purpose. Ipecac will often succeed if given in doses of not less than 40 gr., the patient being put to bed, treated with opium, ice-bags and mustard plasters to the stomach. From 60 to 70 per cent. will be cured by one administration; 10 to 20 per cent. by the second dose, and 20 per cent. will require some other kind of treatment. Another drug is bismuth subnitrate, which he gives in 40 gr. doses, with 5 gr. of Dover's powder every four hours as the case may indicate. He also gives ipecac in 1 to 1.5 gr. doses every hour for two or three days, often with good results, though he prefers his first mentioned method. Drugs given by enemas. Of these he prefers the silver nitrate, 20 gr. to the pint, or quinin for amebic cases. The bowels should be cleansed with a soapsuds enema before administering the medicated injection, and a soft rubber rectal tube with a fountain syringe should be used. Tincture of chlorid of iron, 1 gr. to the pint in hot water may give as good results as nitrate of silver. Normal salt solution, laudanum, and starch water enemata are also of value. In feeding, some highly nutritious food in small amounts is advisable. Milk should never be given as such, but always diluted with rice or barley water or lime water. Kumyss or allied preparations may be tried, also fresh beef juice, a saline enema now and then and turpentine stupes and massaging of the abdominal region should not be neglected.

8.—This article was noticed editorially in THE JOURNAL of April 6, p. 968.

9. **Fractures.**—The new method of treating fractures is based on the principle, as Hatch puts it, of converting all compound fractures into simple ones, to operate on the simple fractures making them compound, and then apply the first principle, making them simple. The technique is the same for both forms, except that in simple fractures there is a point of selection for the incision, while in compound fractures the wound is simply enlarged. Antisepsis must be most complete, thorough scrubbing with soap and water, bichlorid solution, permanganate, and oxalic acid solution, covering all the other parts of the patient with sterile sheets and towels. The extremity should be held in a vertical position for a few minutes, then a rubber constrictor applied, and a sterile posterior and anterior splint of any suitable material fitted. The points of selection for incision are for the tibia along the crest, for the femur along the outer side of the thigh, for the radius behind the supinator longus, for the ulna along the ulnar side of the arm where the bone is most superficial, for the humerus along the outer side of the arm. A good, free incision should be made, as it is important to have plenty of room, and the size of the incision does not complicate the case. All clots and débris should be washed out, removing all shreds of soft tissue and loose pieces of bone. If any sharp points of bone prevent perfect coaptation, remove them. Remove the rubber band, tie all bleeding points, and be sure that the wound is dry. If in case of a compound fracture the periosteum is stripped up, carefully replace it. Secure perfect coaptation. Apply one of the splints before closing the wound, to make sure of holding the fragments in place. Close the wound with catgut sutures without drainage, and lay a thin pad of iodoform gauze over the wound; apply the second splint and bandage quite firmly, as there will not be any swelling like that which occurs after a fracture treated in the usual manner. Remove dressings on the seventh or eighth day and apply a plaster cast or ambulatory splint, according to the requirements of the case. It is safe to discontinue splints at least one week earlier than in fractures treated by former methods. Hatch also reports cases. The author's deductions are that we should not be deterred from operating on fractures by the fear of sepsis, and that operation would be warranted if it did nothing more than relieve the pain and swelling, which it certainly does. It also shortens the repair process at least one week, and reduces the chances of deformity and non-union to a minimum.

12. **Atmokausis.**—The use of steam at a temperature of 100 C. to the interior of the uterus, a method used abroad by Pincus, Dührssen, Snegirjoff and others, has been employed by Bandler who gives the *rationale* of its action; he explains it, analyzes the experiences of various writers, and describes the technique of the method. Dilatation of the cervix is an essential preliminary. Narcosis is not necessary, no pain being felt except when the cervix is involved. As a rule the cervix must not be treated, as it may cause atresia before the complete obliteration of the cavity of the womb and in any case too early cervical atresia should be avoided. On the introduction of two Simons' specula after disinfection of the parts, the posterior lip of the cervix is grasped with the vulsellum forceps, previously boiled. The uterine tube should be marked so that it may be determined how far it is introduced. It is carried up above the internal os as high as necessary. The metal tube which carries the steam then follows, the bulb at its lower end closing the opening at the external end of the uterine tube. During the process of treatment this inner metal catheter is moved occasionally to permit the outflow of liquefied steam and coagulated blood and to prevent too high pressure. The uterus soon contracts under the steam and the tube is slowly and gradually drawn out until, when it reaches the internal os, the entire inner surface of the uterus has been affected. If the cervix is also to be treated the steam is continued while it is withdrawn to the external os. After the treatment rest in bed for ten or fourteen days is necessary. The duration of the steam as a rule is about 15 to 20 seconds in younger women, where no obliteration is desired, and four to eight minutes if total obliteration is intended. The temperature is 100 C. in

the boiler, which probably amounts to about 70 C. in the uterine cavity. There is generally a serous discharge for several days or weeks and no repetition should be done within four weeks, or until after regeneration of the mucous membrane. The contraindications are malignant disease of the endometrium or the presence of retained membranes, and the affections of the tubes and inflammatory conditions which are contraindication to curettage. Bandler thinks that the method is the best we have for the treatment of uterine arterio-sclerosis.

13. **Coexistence of Uterine Carcinoma and Fibroma.**—From a study of the clinical and histological manifestations of reported cases, Dorland concludes that it is possible for fibroma and carcinoma of the uterus to coexist, and this coexistence may show itself in one of three ways, as follows, in the order of the frequency: 1. Fibromyoma of the corpus uteri with carcinoma of the cervix, the increased vascularity of the uterus and the irritant leucorrheal discharges attendant upon the benign tumor favoring in those women so predisposed the development of cervical malignancy. 2. Fibromyoma of the corpus uteri with associated adenocarcinoma of the endometrium, the malignant disease not invading the benign tumor, but originating either in the tubular utricular glands or in the included glandular vestiges which may be present. 3. True cancerous degeneration of an adenomyoma, the malignant change originating in glandular vestiges, included in the uterine growth, or the carcinomatous disease invading the benign growth by extension from an endometrial adenocarcinoma through contiguity of tissue. The article concludes with a series of cases from the literature.

14. **Shock in Abdominal Operations.**—Turck points out that while many facts in regard to shock are mysterious, there are two important factors not yet sufficiently recognized: One is the decreased resistance to infection when shock is present and the second is the increased resistance against infection produced by the internal application of heat in preventing or reducing shock. He gives the details of his experiments to demonstrate the effects of heat in preventing or reducing shock and to determine the changes in the blood during shock. He injected the serum of an animal in this condition into healthy animals, and reproduced the condition in them. He found that animals thus treated were more susceptible to infection, though more experimental work is required to establish this point. In another series of experiments he found that when an animal is stimulated by heat for one hour or more, the heat applied within the splanchnic area by the methods previously described, immunity or resistance against infection was produced. When the serum of such an animal was injected into another there was increased resistance produced or partial immunity to infection.

15. **Phenylhydrazin Test.**—Williamson modified the phenylhydrazin method by heating equal parts of sodium acetate and phenylhydrazin hydrochlorid, one-half inch of each in the ordinary test-tube, with the urine over a spirit-lamp for two minutes after the solution had reached the boiling point. He then leaves the test-tube for one-half hour to twelve hours to form the deposit. Willson modified Williamson's method by, instead of allowing the solution to cool gradually or stand for hours, putting a drop directly on the slide and examining it under low power (AA Zeiss) of the microscope. In from one-half to two or three minutes, depending upon the temperature of the room, and the quantity of sugar present, if the reagents have been thoroughly mixed and dissolved in the urine before boiling, typical crystals of phenylglucosazone can be seen forming beneath the eye of the observer. The color is a brilliant yellow, contrasting strongly with the brown globules and dark yellow granules that appear in the precipitate. A still further modification is mentioned; he favors the somewhat more slow method of using a small beaker as an improvised water-bath, but this method only lengthens the examination to about ten or twelve minutes. He believes that in this way we can have satisfactory methods available to everybody who possesses a microscope and test-tube, and this modified phenylhydrazin test combines the most valuable qualities and gives the greatest accuracy of any of the tests employed.

16. **Stammering.**—Makuen points out that stammering is due to faulty mental action, the lack of proper combination of ideas and oral expression. The first indication in the treatment, therefore, is to direct the mental processes into normal channels. We must untangle the somewhat twisted thoughts and the patient should be unconsciously diverted from the all-absorbing subject at hand until he has regained his mental equilibrium, and then led gradually back to the main subject and given a clear conception of exactly what it is he desires to say and shown how to say it in a deliberate and clear manner. It is quite possible to do this, and treatment in the beginning of the trouble will be the most certain cure of stammering. It is after the habit has become fully established that the trouble is serious, children should never be allowed to begin to learn to stammer.

18. **Some Therapeutic Fallacies.**—The therapeutic fallacies specially noticed by Peabody are the belief in bitters being conducive to appetite, which, he thinks, act from the alcohol, as a rule, and are liable to do evil in this way. The notion of the therapeutic use of the disinfecting power of boric acid and the astringent use of tannic acid, and certain erroneous theories as to the employment of ergot and lithium are also noted. The notion that arsenic acts as a preservative of the body, when given in toxic doses is an important medicolegal fallacy, since decomposition is specially liable to occur in such cases. The belief in a special action of mercury on the liver still may exist. The overuse of the iodids, especially in arthritis deformans, in gout, lead poisoning, etc., the Bergeon treatment of consumption, and gaseous and aerial disinfection, oxygen inhalation, etc., are also mentioned.

19. **Ionization.**—Fischer's article covers the field of the theory of electrolytic dissociation, and the relation of ions to life phenomena. As regards the latter, he reviews the literature with references largely to the work of Loeb. The theory of ionization, he claims, offers a new field for investigation in the realm of medicine and it will probably produce greater results in the solution of important problems. He has attempted to show the evidences that, in the dealing with the action of dilute solutions of inorganic substance we have to do with the action of their constituent ions. This fact, he thinks, should be borne in mind when we consider the physiologic, pathologic and pharmacologic problems which involve the presence of inorganic substances.

22.—See abstract in THE JOURNAL of March 23, p. 830.

26. **Vaccination.**—Fielder thoroughly reviews the subject of vaccination, its methods, symptoms, complications, effects, technic, etc. The points emphasized are, in substance, as follows: 1. Complete natural immunity to vaccination is practically unknown. 2. In primary cases, delayed vesiculation, raspberry excrescence, and abortive course means poor virus. 3. There is no need of transmitting syphilis or tuberculosis. Other infections, such as erysipelas, septicemia, etc., are becoming rarer as methods improve. 4. During the second week of vaccination, a large painful areola may be considered normal, if bright red, and if the vesicle be of typical appearance. If the vesicle is irregular, filled with greenish pus, and the areola be a dark livid, purplish hue, there is a mixed infection. 5. Generalized vaccinia, aside from auto-inoculation, is rare; it can be decided by inoculation into another subject, if it appears. 6. The destruction of the vaccin vesicle does not interfere with the immunity. 7. Immunity is acquired by the time the areola is at its height, that is, eight or ten days after vaccination. 8. Vaccination in a pregnant woman does not protect the child. 9. The fetus *in utero* may have smallpox if the mother has it. A child born while the mother has smallpox is not protected, but has been exposed and will probably develop the disease. 10. The duration of the immunity is very variable, and in the presence of an epidemic is not sufficient. A successful vaccination within five years will probably prevent the contracting of the disease, but will not be a certainty. 11. The duration of immunity to revaccination, which is conferred by vaccination, is extremely variable, and is probably short—two years or under—in a large proportion who have been exposed. 12. The protective power of vaccination is in

direct proportion to its excellence. The completeness is shown in the resulting scars. The quality of the scar is more important than the number. 13. While the quality of the scar is a fair indication of its protective power, it is an untrustworthy guide in deciding whether the individual is susceptible to revaccination. 14. Persons immune to smallpox can often be successfully revaccinated. 15. Vaccination protects against smallpox as fully as an attack of the disease protects against a subsequent attack. 16. Persons who have been successfully revaccinated are much less likely to contract or die of smallpox than persons who have been vaccinated only once. The more successful vaccinations one has had the more sure is the immunity. 17. Revaccination should therefore be considered as important as the primary vaccination, and as systematically practiced. 18. Primary vaccination should be performed in infancy; revaccination at the school age. In the presence of an epidemic, however, revaccination should be performed even when primary vaccination has been comparatively recent. 19 .The eruption in revaccination is more likely to follow the type of vaccinoid than that of typical vaccinia. 20. Vaccinoid protects if the vaccin used is of high-grade efficiency; if poor, only partial immunity is conferred. 21. All vaccin virus should be subjected to rigid physiologic tests when using. It should be retested monthly as long as it is on sale. The virus from each animal should be kept by itself and numbered, and be known by that number when issued. 22. Vaccination should be performed only under aseptic precautions. 23. It is not sufficient merely to smear the virus upon the scarified areas, but it should be thoroughly rubbed, scratched or pricked in. 24. Vaccination shields often do more harm than good. 25. Infected cases of vaccination should be cared for by the physician. 26. Remember that the destruction of the vesicle does not impair the protective power of vaccination, and if signs of mixed infection appear, open the vesicle, cleanse the wound and treat it on general surgical principles.

32. **Diphtheria.**—Gidney maintains that the essential treatment for diphtheria is the use of antitoxin. The routine internal treatment has been abandoned. When the pulse shows signs of failure, digitalis, strychnin and alcohol may be of some use. While the treatment merely consists in administration of the antitoxin early and in sufficient dose, there need be little fear of administering an overdose.

33. **Mixed Feeding of Infants.**—The subject of mixed feding divides itself into two heads: 1. Artificial feeding as adjuvant to nursing. 2. Human milk as an adjuvant to other foods. Besides the conditions mentioned by text-books, a deficiency of the quality of milk secreted and a diminution of solid milk constituents, Zahorsky enumerates others: The excessive amounts of proteids causing colic and indigestion; the very laxative effect of mother's milk and a condition which has been observed several times, that human milk becomes toxic. He mentions the value of artificial feeding with human milk in the following conditions, marasmus, gastroenteric infection, rickets with tetany, and scurvy. In these conditions a little human milk may have a powerful therapeutic effect.

35. **Burns.**—After first noticing the importance of burns and the extent to which they may occur without becoming fatal, Allen remarks on their treatment, especially in infants. While the pain is not usually very great at first, our first efforts are directed to calming the patient and meeting the vital depression and shock to the nervous system. For this aromatic spirits of ammonia in appropriate doses is generally found as efficacious as anything, and unless the child is too young opium properly administered will be of service. For local application he knows of nothing better than a 1 per cent. solution of picric acid for burns of the first and second degree. After the area has been coated once or twice with the solution, a thin layer of absorbent cotton may be applied dry, and after this a layer of impervious tissue and then as much cotton as is required for warmth, protection, etc. At the subsequent dressings all may be removed excepting the layer next the skin, which may be again wet and the dressing applied as before. The danger of outside infection is less, and pain avoided by not disturbing the inmost dressing. Erythematous areas may be relieved of pain by local baths containing nitrate of potassium or bicarbonate of soda. In deeper and extensive burns a permanent bath offers the best means of securing comfort and warding off a fatal issue. He mentions the old carron-oil as one of the best known and most extensively use applications. He has been in the habit sometimes of using it with some antiseptic. One important point he thinks, is to refrain from the removal of dressings; if thin layers of gauze, cotton, or cheese-cloth come next the wound, they need not be taken off but may be soaked with the application, whatever it may be. The chances of infection are lessened and mechanical irritation avoided.

39. **Tuberculosis.**—The new treatment recommended by Fliesburg consists in the hypodermic injection of a prescription of which the following is the formula:

R. Iodi puri cryst. 1.50
Phosphori puri 0.25
Thymolis
Mentholis, āā 2.50
Guaiacolis 1.25
Ol. morrhuæ sterilizat 50.00

Ft. sol. secundum artem. Sig.: Use only hypodermically. For tuberculosis of the lungs, throat, glands and intestines, one to three syringefuls once a day, preferably in the forenoon; for tuberculosis of joints and tendons, inject into foci deeply, and then apply bandage; repeat in four to eight days as necessary.

He reports cases which he thinks show the value of the method.

40. **Influence of Sexual Organs on the Eye.**—Morton calls attention to the eye changes and the symptoms that may occur in connection with puberty, the menopause, etc.; also those caused by the habit of masturbation, and reports cases illustrating them.

41. **Potassium Iodid.**—Two cases are reported by Mann as illustrating the idiosyncrasy to this drug. In one the administration of 10 gr. of potassium iodid three times a day in less than two weeks caused an extraordinary eruption followed by death. In the other a patient taking 180 gr. regularly every twenty-four hours suffered no inconvenience.

46. **Ectopic Pregnancy.**—McNaughton thinks that the diagnosis can be made as easily as that of most other genital diseases of women. It will not often be required before rupture, though it is possible. In 70 cases he made the diagnosis thus in three. He emphasizes the necessity of regular inspection of the vermiform appendix in cases of laparotomy for this condition. His special points are that ectopic pregnancy is not a rare accident; that impregnation usually takes place in the tube; that rupture takes place in most, perhaps all, cases before the eighth week, when presumptive diagnosis is not difficult.

47.—See abstract in THE JOURNAL of March 9, p. 681.

48. **Malignant Growths.**—Van der Veer reviews the statistics of carcinoma and points out its increase, calling attention to the needs of its early recognition, as it is then that the patient can best stand the shock and hemorrhage, and there is greater probability of the thorough removal of the malignant growth. Unsightly scars are also more likely to be avoided. He especially notes the importance of early recognition of malignant growths in the breasts and female genitals, and insists on the importance of the practitioner learning about any previous injury that has occurred. He favors exploratory incision in clearing up the diagnosis in obscure cases; though laparotomy is always dangerous, still it ought to be done where it will confirm the diagnosis.

51.—See abstract in THE JOURNAL of March 16, p. 759.

52.—Ibid., p. 760.

53.—Ibid., p. 759.

61. **Nasal Obstruction.**—In a series of experiments in the physiological laboratory of the Medical College of Indiana, Morrison arranged some special apparatus for investigating this subject, and in substance gives the following summary of his results: With the mouth slightly closed each ventricular

systole causes a distinct but slight change of pressure in the buccal cavity. Quiet respiration through the nose has but little effect. In wide open mouth breathing not exceeding eighteen to twenty efforts per minute no change in pressure occurs. As the orifice of the mouth is slowly contracted, negative pressure is gradually developed in inspiration and increases with the diminution and size of the orifice until it is closed, when it abruptly falls to the normal. If the mouth be opened widely and respiration is increased to thirty-six per minute, marked negative pressure persists in inspiration. In the nose without obstruction and with the mouth closed a very slight negative pressure is developed in inspiration, and a still slighter positive pressure in expiration. In the ear no appreciable change of pressure was noticed. Slow occlusion of one nostril with closed mouth causes rapid increase of the negative mouth pressure, which becomes very marked when a sense of dyspnea leads to respiratory effort. If one resists the feeling of dyspnea and breathes slowly, such increase does not occur. If the mouth be slightly opened negative pressure still persists, but slightly diminished. Repeating aloud some words very rapidly until out of breath, then taking a sudden deep inspiration with one nostril closed develops greatly exaggerated negative mouth pressure. In the nose, occlusion of one nostril causes high negative pressure during inspiration, which is increased if the other nostril is partly occluded. If both nostrils are completely closed no such fluctuation in pressure takes place. This high negative pressure from occlusion of the nostrils is only very slightly relieved by opening the mouth. When sufficient obstruction is produced to lead to mouth breathing or labored attempts at nose breathing fluctuations of pressure take place in the middle ear. In a state of health very little negative pressure or "suction force" is developed in either mouth or nose. No changes occur in the ears. With rapid breathing negative pressure slightly increases in both nose and mouth, but not to an injurious degree. With marked nasal obstruction the negative pressure is found in both nose and mouth, and slightly in the ear, and is increased by any effort leading to exaggerated respiration, such as speaking, singing, muscle exertion, etc. This condition is not relieved entirely by mouth breathing. Early relief from nasal obstruction is demanded. Before the patient becomes a "mouth breather" every inspiration has been acting as a cupping glass upon the nasal and nasopharyngeal membrane and the cupping action is not relieved when the lips are parted to the extent that they are in ordinary mouth breathing.

65.—This article appeared in THE JOURNAL of February 16, p. 424.

73. **Cerebral Abscess.**—The case reported by Passow was that of a suicide on whom operation had been made for cerebral abscess seventy days before. At the autopsy it was found that the cavity had filled up and nothing could be seen of the abscess but a barely visible linear scar. The condition of the dural cicatrix was similar to those described by Macewen. The cicatrix itself was about one-third the size of the original abscess, and extended into the cerebrum for not quite 1 cm., but the surrounding brain substance also showed pathologic changes in the nerve cells, and the glia tissue was ill-defined and vascular, with numerous round cells. The nerve cells were irregular in shape, of different sizes, devoid of process and partly of nuclei. There was no sharply drawn line between the normal and abnormal tissues.

74. **Mastoiditis.**—In 40 cases of acute purulent otitis media coming in regular order in the practice of Bacon, operation was required in 10, 2 of these with subsequent operation for sinus thrombosis, one of which terminated fatally. That is to say, in 30 cases the mastoid cells were not opened. Brief descriptions are given of a number of these cases. Treatment was by the use of the artificial leech and Leiter coil, together with free incision in the drumhead and frequent douching of the ear with boric acid or bichlorid solution. He does not say he is opposed to mastoid operation, but since he has used this method of treatment, he has had fewer operations than formerly. It requires considerable experience in aural disease and ability to recognize very early the more serious symptoms which call for operation, but the aural surgeon should do all in his power to cure his patient without opening the cells.

85. **Trifacial Neuralgia.**—White summarizes his views of the general subject as follows: The essential cause of trifacial neuralgia in any case is usually unknown. It may be a central, peripheral or general constitutional condition. There is a corresponding uncertainty in the treatment. The period of medical treatment should be distinctly limited in severe cases when the attacks succeed each other at short intervals. If unsuccessful, it should not extend beyond six months or a year. It will vary according to the circumstances. Operations on the peripheral nerves should still be done and are likely to be of use when the disease is distinctly limited to either the second or third division of nerves, or when we are confident that it is due to peripheral neuritis. The peripheral operation might even effect a cure of the central form by producing atrophy of the centers, and if very thoroughly done the results are often excellent. In the exceptionally severe cases affecting all the divisions of the nerves and with no immediate relief from medical treatment, the intracranial operation may be considered as the primary operative procedure. As a rule it should be resorted to only after failure of medical treatment and of peripheral operations. The Hartley-Krause operation is the preferred one. The operator may limit his interference to evulsion of the second or third division between the ganglion and foramina, as this has been followed by cure in a number of cases. By thus doing he lessens the risk to the abducens and cavernous sinus, and by leaving the first division untouched diminishes the danger of trophic change in the eye. Any primary and exclusive disease of the first division has never been known. It is quite possible, however, that further observation will show that it is better to remove the entire ganglion with its motor and sensory roots. The author reports a case which inspired him to give the above views.

86. **Tuberculin Test.**—Frazier and Biggs favor the use of the tuberculin test and maintain that when properly employed it is harmless. There are certain cases, however, in which it is apparently somewhat unreliable. Clinical evidences from thousands of cases speak for the reliability of the tuberculin test, though occasional positive reaction will follow injections of tuberculin where tuberculosis can not be or can not be proven to be present. In syphilis, for example, reaction may occur. It is possible that remnants of the disease may still exist, giving rise to reactions where it had not been detected or suspected. Tubercular foci may also be present. The existence of such tubercular foci in the lymphatic system might make the tuberculin test apparently unreliable for the demonstration of the presence or absence of tubercular lesions in other parts.

97. **Hemorrhage into Suprarenal Capsule.**—This concluding installment of Hamill's article is entirely given up to the description of cases, collected from the literature, of the lesion of hemorrhage into the suprarenal capsule in the stillborn and in infants.

98. **Adenoids.**—Huber describes the symptoms and consequences of adenoid growths and calls attention to certain points in the diagnosis. He mentions two which jointly offer a ready and easy method. These consist in: 1. The presence of two small hypertrophied lymph nodes, painless and freely movable, at the angle of the lower jaw, one on either side. These are apt to become swollen in catarrhal inflammation of the nose, but return to their normal size unless a mixed infection has taken place. 2. The presence, on oral inspection and examination, of numerous small lymphoid hypertrophies of the mucous membrane of the posterior pharynx with larger masses occasionally present at the level of the soft palate. The appearance is characteristic; the isolated prominences are pearly and translucent, resembling sago grains, projecting above the surface of the pharyngeal mucous membrane; the presence of both signs together justifies the diagnosis of adenoids and renders digital exploration of the nasal pharynx unnecessary. These two signs have been insisted upon and have for some years been taught in the practical course of the Vanderbilt Clinic. The observations are not claimed as original, though

Huber can not at once recall the original source. As regards treatment, the earlier the growths are removed the better. They interfere with normal nasal respiration; the blood is not sufficiently aerated, and the bad results are not local, but general. In very mild cases attention to the general health and the internal administration of syrup of iodid of iron should be advised for a time, but in any case where decided symptoms are associated, the growth should be removed. He prefers to operate without anesthesia. If after a few weeks it is found that the growths have not all been removed, a second operation can be done. The existence of acute otitis media, bronchitis or inflammatory processes in any part of the respiratory tract is a contraindication for operation. The after-treatment consists in instilling warm water into the nares every few hours, with liquid diet, and confinement to the house for a few days. Nasal irrigation, no force being used, is kept up for weeks. Iron, arsenic, strychnia or syrup of iodid of iron is continued for months.

99.—See abstract in THE JOURNAL, XXXV, p. 1653.

103.—See abstract in THE JOURNAL of January 12, p. 128.

106.—Ibid., XXXV, p. 1047.

108.—Ibid., January 12, p. 126.

110. **Nitrate of Silver.**—Three cases of inflammatory disorder of the upper respiratory tract are reported, which were treated by strong solution of silver nitrate—60 gr. to the ounce—applied on the lateral walls of the fauces. When painted on this portion of the throat Gleason claims that strong solutions of silver nitrate possess a sedative, an astringent, and an antiseptic action, the value of which can not be overestimated.

111. **Postoperative Pneumonia.**—The following questions were suggested to Marvel by cases in his experience: 1. What is the probable percentage of post-operative pneumonia? 2. Should evacuation by aspiration or drainage be recommended before resolution is complete? 3. Does the absence of the characteristic physical signs argue in favor of the inadequacy of the signs to accurately indicate the degree of danger in the disease? As regards the first question, by analysis of the statistics he finds that the percentage given by various writers of postoperative pneumonia differs so much that no percentage rate is determinable, but that an estimate may be stated as ranging between .12 and .33 of 1 per cent., and the fatal cases between .01 and .09 of 1 per cent. In answer to the second question, he does not advise aspiration until the crisis is passed, unless the embarrassment to the circulation and breathing or strong evidence of toxemia makes it imperative. As regards the third, he quotes Andrew H. Smith on the uncertainty of the importance of consolidation, since the toxin formation is still carried on beyond its limits. While the physical signs are of the greatest importance in diagnosing the conditions, he does no think these are always proportionate, nor do they represent the measure of gravity in the case and too much stress can not be laid upon the presence and behavior of toxins and their influence in pneumonia.

112. **Chloretone.**—Siter recommends the use of chloretone in dusting powders for painful granular growths, as producing analgesia and not delaying union or granulation. It can be used in combination with almost any dusting powder. In the cases reported, over thirty in number, it was used in combination with boracic acid. Its effect is solely, he thinks, an anesthetic one and it has no special influence on the progress of the cure.

114. **Local Treatment of Pemphigus.**—Van Harlingen reports a case of pemphigus treated by the internal use of strychnin and quinin, with stimulants and milk diet, and the opening of blebs, the lesions being dressed in a bichlorid solution. His plan, he says, is to open each bleb as widely as possible and later apply a wet dressing of bichlorid of mercury of 1 to 2000 or 1 to 4000, and keep it on for twenty-four to forty-eight hours. This is then removed and ichthyol, either pure or in 20 to 50 per cent. aqueous solution, is applied. After a few days this is changed for a simple zinc oxid paste or ointment or occasionally a europhen or iodoform ointment. When the eruption is very extensive one part may be treated at a time, thus diminishing the danger, which he doubts, of absorption from large surfaces. Other bullar eruptions and pseudopemphigus can also be treated in the same way or at least on this principle.

126.—See abstract in THE JOURNAL, XXXV, ¶120, p. 980.

133. **Oxygen in Pulmonary Obstruction.**—Doolittle recommends the use of hydrogen dioxid in 4 to 1 dilution, in conditions where a considerable proportion of the absorbing pulmonary cells are put out of action, as in extensive pneumonia. By giving this in sufficient quantity by the mouth or rectum, to make up for the deficiency of the oxygen taken in by the lungs, he claims we give the heart a healthy oxygenated blood to work on and relieve the overtasked working air-cells and heart. He reports cases where this has been tried with apparently very good results. While hydrogen dioxid has been recommended internally in small doses as a heart tonic in pneumonia, etc., he has not been able to find any one who has administered it in sufficient quantity and for the purpose of resupplying the deficiency of oxygen. Its administration does not interfere with oxygen inhalation or any other remedy which may be indicated. He thinks its free administration is of value in bronchopneumonia and also in laryngeal diphtheria. In one of his cases he gave a tea-spoonful every five minutes to an infant 3 months old, with the best results.

145.—See abstract in THE JOURNAL, XXXV, p. 1296.

FOREIGN.

British Medical Journal, March 23.

Auto-reduction of Hernia "en masse" as a Cause of Abdominal Obstruction. W. J. WALSHAM.—In this communication the author calls attention to a possibility which does not seem to him to have received much attention from the profession. He reports three cases of auto-reduction of hernia *en masse*, which produced symptoms of intestinal obstruction, requiring operation, and he has had seven such cases during the last few years. He therefore thinks the condition not so uncommon. The diagnosis may be attended with considerable difficulty, and he emphasizes the importance of not relying solely upon our observation of the hernial rings, but of obtaining as full a history of the case as possible from the patient. The importance of early diagnosis can hardly be overestimated.

The Lancet, March 23.

Diseases and Disorders of the Heart and Arteries in Middle and Advanced Life. J. MITCHELL BRUCE.—In this second lecture the author reviews the symptoms of tobacco heart, which is characterized especially by irregularity and anxiety without marked alteration of cardiac sounds or enlargement, at least in young persons. In older ones there may be a certain amount of enlargement and a much greater degree of pain and angina, and altogether a more formidable syndrome; in alcoholism, on the other hand, enlargement is the rule. The precordial impulse is usually weak and there is in a certain proportion a slight apex systolic murmur, indicating mitral leakage. Complaints usually are of palpitation, faintness and precordial pain, but angina is rare as compared with tobacco heart. The gouty changes are also noted, irregularity, dyspnea, precordial pain, angina, systolic murmur of the mitral area, etc. He has never met with aortic incompetency from gout. Closely allied to this condition is a disturbed metabolism, characterized by corpulence and glycosuria. He found that out of 12 cases, 9 had systolic aortic murmur, and nearly one-half an ill-developed mitral systolic murmur. The complaints are very similar to those of the gouty as regards pain, but neither palpitation nor faintness was so often mentioned. Other conditions noticed are cardiac strain, which is specially liable to show its effects in advanced life, particularly in persons who attempt to resume the athletic exercises of their youth. Syphilis and nervous strain are also noticed, and he thinks that the profession in general is not alive to the gravity of syphilitic changes in the cardiovascular system. He believes it accounts for a considerable proportion of the more serious cases of heart disease in elderly persons.

Blackwater Fever. J. W. W. STEPHENS.—The writer believes blackwater fever is essentially a malarial infection in which quinin is the most common determining cause of intoxication. Protection from malaria will insure against blackwater fever and his own experience shows that this protection is possible in tropical Africa under all kinds of conditions without the use of quinin, by paying scrupulous attention to clothing and the use of the mosquito net.

The Practitioner, March.

Intermittent Fevers and Blackwater Fever. LOUIS M. SAMBON.—The various intermittent fevers are described by Sambon, who recognizes four types, corresponding to four different species of parasites, viz., quotidian, tertian, quartan and what he calls semi-tertian, using the old Hippocratian term in preference to "estivo-autumnal" now in common use. He reviews the phenomena of the paroxysm and describes the parasites—the hemameba vivax of tertian fever, the hemameba malariæ of quartan fever, the hemomenas Laverani of semi-tertian fever, and mentions the somewhat uncertain parasite of quotidian of which our knowledge is still very imperfect. In practice the cases that come under observation are often complicated. We have multiple groups of some species; we have the simple, double, triple or irregular or subcontinuous quartan fever; the simple, double or irregular tertian, and in the semi-tertian and quotidian fevers we have also a multiplicity of parasites so that it is usually difficult to account for the irregular types of fever which may thus arise. Mixed infection with parasites of two or more types are frequently observed, the tertian and quartan for example or the tertian and quartan and semi-tertian. Any other disease may complicate malaria, among them cholera, blackwater fever, siriasis, tuberculosis, etc. Pneumonia is the complication which has given rise to the most discussion, but we now know positively that there is no malarial pneumonia. Malaria may co-exist with typhoid and the semi-tertian form may be strikingly similar to it in its symptoms. In the temperate climates this type of malaria usually occurs at the same season of the year and may come on without chills, the remissions may be slight, there may be great prostration and abdominal symptoms and no parasites found in the peripheral circulation. Typhoid fever has frequently been mistaken for semi-tertian fever. The pernicious attack is an unusually severe attack of the semi-tertian caused by a multiplication of parasites, which accumulate within the capillaries of the brain and meninges and other internal organs. The pernicious is never the first attack and is most frequent in recent affections. The symptoms vary with the localization of the parasite and the resisting powers of the individual. Blackwater fever is discussed by the author at some length, its geographical distribution described, and the various alleged discoveries of its causes—which he does not consider proven—its seasonable prevalence, the predisposing causes, etc. The various theories of its origin are discussed and Sambon evidently does not consider it proven that it has a direct connection with malaria. The quinin theory he rejects, and his own view that it is a specific disease is based somewhat upon the similarity of hemoglobinuric fever of cattle in which Smith and Kilborne have discovered a protozoal parasite, the Piroplasma bigeminum, hence it is quite reasonable to infer that blackwater fever may be due to some protozoan organism. Diagnosis from the semi-tertian is usually not difficult, and in the early stages the presence of characteristic parasites is demonstrative. From yellow fever it is distinguished by the rarity of black vomit, the color of the urine in the early stages and the absence of serum albumin, enlargement of the spleen and liver and its irregular course. A sound prophylaxis can not be established without the knowledge of the cause of the disease, and further study is required. With our present knowledge we can also recommend in a general way the avoidance of low, swampy districts, especially during the hot season after the rains, and protection against mosquito bites. Quinin, he thinks, has no specific action, and in most cases seems injurious. There is no one drug that is of the slightest value. The disease must be treated symptomatically until laboratory experiments have found the specific treatment. We are at present in the same condition in regard to typhoid fever and other infectious disorders. He prefers colonic irrigations to calomel. The patient should be allowed to drink freely, and the food should be liquid; the patient confined to his bed until convalescence is well established. Warm alkaline drinks must be used as an emetic to help to get rid of the great quantity of irritating bile which causes the exhaustive vomiting. When this is persistent, water and food should be administered by the rectum. Sponging with tepid water is advised and as little disturbance as possible. Hot fomentations and turpentine stupes may be applied to the loins to alleviate pain and urinary suppression. Gouzien has employed hypodermic injections of normal salt solution with great success.

The Genus Anopheles. ERNEST E. AUSTEN.—The characteristics of the different genera of mosquitoes are described by the author, and the practical characteristics of the Anopheles discussed. They are the long palpi, as long or longer than the proboscis in both sexes, the blotches on the wings, the peculiar position of the proboscis, it being in the same straight line when resting, a more slender form than the Culex and, in some specimens at least, the characteristic position when resting—inclining the body at a considerable angle from the surface. The real characteristic, however, in this is the position of Culex, which is hump-backed, the proboscis at a decided angle with the body, while in Anopheles they are both in the same line. When the Anopheles rests with the body parallel to the surface it is generally found that one of the legs is missing. The piping note of Anopheles also is said to be lower than that of Culex. The position of the larva in water is also another characteristic, it usually being parallel to the surface; that of Culex is nearly perpendicular. The Culex breeds in all sorts of places—in buckets, tubs, cisterns—but Anopheles prefers natural pools, generally with some vegetation such as algæ, etc. It may breed in sea water. The eggs of Anopheles are found singly on their side instead of being collected as are those of Culex. The number of species of Anopheles at present known is about forty and there are more than ten others that will shortly be described. The genus is found all over the world, though there is no species so generally distributed as is the case with certain species of Culex, which is possibly due to the fact that the latter, breeding in ponds, water tanks, domestic receptacles, is carried by human agency while Anopheles being the wilder and less domestic insect is more restricted.

Annales de l'Institut Pasteur (Paris), February.

Parasitic Theories in Regard to Malignant Neoplasms. A. BORREL.—The research that has been made in this line is reviewed by Borrel, who observes that possibly there may be several kinds of malignant neoplasms, some due to sporozoa, some to bacteria, others to blastomycetes, etc. The evidence to date is not conclusive in respect to any of the theories that have been advanced. He publishes illustrations showing the progress of certain changes in the cells of these neoplasms which he has observed and followed. They commence with vacuolization and the results of the process deceptively simulate parasitic elements and are possibly the supposed micro-organisms seen by other scientists. He gives comparative cuts showing the close relationship between the process and its results with the process of the evolution of the spermatocyte in the testicle of the guinea-pig. In the latter, the evolution results in the formation of a normal element. In the cancer cell the cause and the result of the process are still a mystery, but the results are large chromatic bodies, producing the impression of a degenerating substance. This atypical evolution of the archoplasm or idiosome of the cancer cell must be borne in mind in the researches for the discovery of the causal agent of cancer.

Origin of Alexins in Normal Serum. O. GENGOU.—Metchnikoff believes that the alexin of the leucocytes is liberated only after the degeneration or death of the corpusele. Büchner, on the other hand, considers it an actual, vital secretion of the leucocytes. Gengou describes research which shows that the alexin in the dog and rabbit is found almost exclusively in the polynuclear leucocytes.

Bulletin de la Societe des Hopitaux de Paris, February 7.

Grippal Meningitis. H. RENOU.—The author describes a case diagnosed first from the symptoms, as gastric disturbances, then as an infectious rhinopharyngitis with joint symptoms, but the fifth day disclosed a typical cerebrospinal meningitis complicated by indications of diffuse poliomyelitis. The patient recovered under hot baths, revulsion along the spine and early lumbar puncture.

February 14.

Diagnosis of Typhoid Perforation. FERRIER.—The conclusions drawn by Ferrier, from observation of three cases of typhoid perforation, one of which was cured by surgical operation, are as follows: The diagnosis in certain cases can be made only when the patient is able to describe his sensations. The characteristic facies, the agitation, sensitiveness of the abdomen, meteorism and vomiting are often entirely absent. Possibly only a few attenuated symptoms bearing the imprint of peritoneal inflammation may be observed. The spontaneous pains felt by the patient may be moderate. Localized at first, they may extend later throughout the abdomen, and increase under the influence of movements, coughing, or palpation. As the process extends, indications of defense may be noted in the abdomen. In doubtful cases, rectal palpation and the appearance of bladder symptoms may reveal the involvement of the small pelvis. In subjects previously affected with diarrhea, the suppression of alvine discharges is an important sign, also lower temperature with more rapid pulse. In the successful case, the perforation was found on the small intestine 50 cm. from its insertion in the cecum. It was in the center of a blackish, thickened zone, the size of a two-franc piece. It was obliterated with a purse-string suture and a few Lembert stitches; the peritoneum was irrigated with a solution of boric acid and hot salt solution, and the wound was drained. The operation was completed in forty minutes. The bed was warmed, and artificial serum was injected every four hours. Recovery was undisturbed, except for an obstinate hiccough, day and night for several days.

February 21.

Treatment of Syphilis During Pregnancy. GAUCHER.—The prognosis of a pregnancy in a well-treated syphilitic is not so serious as some imagine. The treatment of a syphilitic pregnant woman should consist, according to Gaucher, in an alternating and uninterrupted series of injections of benzoate of mercury and sublimate pills; the number of injections about double that of the pills. For instance, injections for one month of the benzoate in the following formula: benzoate of mercury 60 cg.; benzoate of ammonium 3 gm.; benzoate of cocain 15 cg., and water 60 c.c. A few drops of ammonia are added while hot, to insure the limpidity of the solution. The daily dose is 2 c. c. for one month, substituted then by two pills a day at meals, each containing bichlorid of mercury and extract of opium each 1 cg. and q. s. of pulverized medicinal soap and glycerin. The pills are given for fifteen or twenty days and then all treatment is suspended for ten to fifteen days, when the benzoate is recommenced. The intensity of the treatment should be subordinated to the condition of the renal function, as determined by the toxicity of the urine and the elimination of the mercury. This treatment should be continued until the end of the pregnancy, and the child is usually free from any taint of syphilis. In one young woman, 72 gm. of albumin to the liter were noted, but this condition was speedily corrected by the specific treatment. Instances are numerous in which a secondary nephritis retrogressed under mercurial treatment during pregnancy. Comby does not give potassium iodid to children with inherited syphilis until the third year, preferring mercury alone for the first two years. In several years of experience with this method, Gaucher has always had the pregnancy progress to term. The earlier this treatment is begun after conception or after infection, the more certain are the results for the welfare of the fetus. Pregnant women seem to have a peculiar tolerance for mercury. In case of albuminuria, the tannate of mercury may be used at first, gradually increasing the dose and resorting to the benzoate as constant supervision shows that the permeability of the kidneys is returning to normal.

February 28.

Treatment of Pneumonia with Antidiphtheria Serum. CH. TALAMON.—Fifty patients with pneumonia were treated at the Bichat hospital with antidiphtheria serum. The mortality the year before had been, for persons under 50 years of age, 23.4 per cent., and above 50 years, 60.7 per cent. During 1900, when antidiphtheria serum was being used, the mortality under the age of 50 was 8.3 per cent., and over 50, it was 28.5 per cent. All but 8 of the 50 were addicted to the immoderate use of alcohol; 37 were men. Considered from all points of view, Talamon asserts that this treatment evidently abbreviates the duration of the disease, suppresses or reduces the chances of complications and reduces the mortality by at least 10 per cent. It failed only once on the 25 patients who were treated with the serum before the fifth day, and this was in a woman of 72. Examination of the fatal cases shows good reasons in existing complications or excessive alcoholism for the failure to cure. Almost all the patients above 40 had arteriosclerosis. In case of kidney disease, caution is necessary, but otherwise the injections may be progressively increased. He injected as much as 200 to 260 c.c. in a few days in some cases, and noted no bad effects except a slight exanthem in a few. Two or three injections of 20 c.c. of the serum are usually sufficient in patients under 50, and four or five over this age. One injection may prove sufficient in some cases, while others may require six or seven.

March 14.

Otitis and Cerebrospinal Meningitis. VAQUEZ.—Besides the meningitis that develops locally from direct communication with a focus in the ear, Vaquez and Lermoyez have observed cases and three are described in detail, in which an old, chronic otitis seemed to have been the origin of a generalized cerebrospinal meningitis—a remote infection in which the spinal predominated over the cerebral symptoms.

Centralblatt f. Chirurgie (Leipsic), March 9.

Treatment of Severe Scoliosis. P. BADE.—During the months that a child is wearing a plaster cast, he or she is constantly growing and usually loses more or less flesh during the treatment. The cast is not adjusted to conform to these changing conditions, and consequently the pressure on the hump and the extension are constantly diminishing. Bade remedies this by applying to the cast the principle of Schede's extension apparatus for spondylitis. This enables the extension to be adjusted as required. The pressure on the hump is regulated to correspond, by two plates which together form a pad, inside the cast, over the hump. One fits on the hump, the other against the inner surface of the cast, and a screw connects them and projects externally through the cast. By turning this screw the pressure on the hump can be increased or diminished at will.

Suture Bolts for Median Cicatricial Hernia. A. HAMMESFAHR.—A woman had been operated on eight times, on account of recurring hernia in the cicatrix left from a median laparotomy for ileus in 1894. The recti kept opening outward. Hammesfahr isolated the recti throughout their entire length—both the upper and under surfaces—and with a nearly blunt needle and strong wire, commenced at the outer margin of one and took a series of stitches horizontally across to the outer margin of the other rectus, leaving a short space each side of the inner margins, with the wire on the outside. Both ends of the wire were also brought up outside and twisted together at the median line. By this arrangement every effort of the recti meets this double wire on the outside and is effectively kept under control. He applied the wires at intervals of 3 or 4 cm., from the symphysis to the ensiform process, and the patient was completely cured of the tendency to hernia. He thinks that two of these suture-bolts would be sufficient in ordinary cases. The peritoneum was not opened.

March 16.

Study of Roentgen Plates. K. LUDLOFF.—This communication states that details are brought out more plainly in a Roentgen plate if it is placed over a translucent plate set in the side of a box containing electric lights and reflectors to

throw the light on the plate, the room being otherwise dark. Remarkable relief is obtained if it is viewed through an opera or large magnifying glass.

Improved Technique of Ether Narcosis. W. REINHARD. By injecting atropin forty-five to sixty minutes before an ether narcosis, the secretion of mucus and saliva is reduced to the minimum. Reinhard prefers to combine it with morphin or codein as follows: atropin sulph., 1 cg.; morphin muriat., 20 cg.; aq. dest., 10 gm. One-half to a whole syringeful is injected subcutaneously. The morphin prevents any possible by-effects of the atropin, and the action of the latter on the heart and respiration center in the medulla contributes materially to the success of the narcosis.

Benzin in Surgery. F. FRANKE.—The odor of ether is distasteful to certain persons, and its high price renders a cheaper substitute desirable. Franke states that for many purposes, such as cleansing the field for operating, removing plasters, dissolving salves, etc., benzin is fully equal to ether, while it does not cool the skin to such an extent. Several years' use of it has convinced Franke that for many purposes it is an effective and even a preferable substitute for ether.

Dermatologische Zeitschrift (Berlin), February.

Severe Mercurial Exanthem. A. BERLINER.—A healthy woman, 42 years of age, began to complain of headaches, and when, a few weeks later, a papulous exanthem appeared on the trunk, her physician ordered mercurial inunctions. She used 30 gm. of gray ointment in ten days. An eruption came on the legs after the first inunctions and extended over the entire body and the mucous membrane of the mouth after the mercury was discontinued. There were no indications of lues. In a few weeks the entire body was discolored by minute petechiae, making the patient look like a negro; the skin was swollen and there was much desquamation, with patches of pemphigus blisters, constantly bursting and discharging, with a fetid odor. The patient was placed in the continuous bath, but symptoms of pneumonia developing, with diminishing pulse and apathy, she was replaced in bed and the temperature raised by the constant application of a mechanical sweat-inducing apparatus. The discoloration persisted when she was dismissed, still looking like a mulatto, and patches of pigmentation remained a year later on breast and back. Pyogenic infection through the blisters was probably the cause of the septicemic symptoms, especially of the capillary hemorrhages. No mercury was found in the urine at any time.

Deutsche Med. Wochenschrift (Leipsic), March 14.

Biologic Proof of Derivation of Albumin in Nephritic Urine from the Blood. V. E. MERTENS.—The specific turbidity produced in diluted blood by serum from a prepared rabbit is evidently due to the albumin in the blood. The same specific cloudiness is also induced in nephritic urine. Mertens accepts this fact as proof that the albumin in the urine in these conditions is derived from the blood. Control tests with animals treated with nephritic urine instead of blood, produced the reaction in the same way. Mertens also calls attention to the fact that the serum of young rabbits of a litter born after the rabbit had been prepared with the preliminary injections, also induced the specific reaction the same as the serum of the mother animal.

Destruction of Tubercle Bacilli in Fats. A. GOTTSTEIN AND H. MICHAELIS.—Oils and fats aid in dissolving the waxy envelope of the tubercle bacillus, and consequently these substances are sterilized with comparatively little heat. A number of tests are reported in which five minutes at 87 C. completely sterilized the oil, margarin, etc., tested.

Lipochromes in the Ganglion Cells in Man and Animals. M. ROTHMANN.—Lipochromes appear in the ganglion cells in man about the eighth year, and become more and more numerous with advancing age. They have never been found in animals, but Rothmann shows that this has been due to the fact that the animals examined were all under the age of 8 years. He has succeeded in finding them in horses, monkeys and a dog, corresponding in every respect to those of the same actual, not relative age in man.

Multiform Erythema with Exudation After Chemical Irritation of Urethra. J. HELLER.—Five cases of erythema following chemical irritation of the urethra are described. In one, a healthy man with remote gonorrheal antecedents, the irritation was caused by a transient contact with 20 per cent. solution of creolin. A purulent urethritis followed with an affection of the joints. A typical erythema with exudation appeared when the urethritis was at its height and paralleled it in its course, vanishing with the cessation of the discharge from the urethra. The chemical irritation probably causes a serous exudation from the mucous membrane. The absorption of this serous fluid then leads to autointoxication in predisposed individuals, and in the course of twelve to forty-eight hours, to the multiform erythema. This assumption would explain Still's twenty-six cases of enema rash, in which the erythema appeared twelve to forty-eight hours after a soap enema. The soap must have acted as a chemical irritant.

Genesis of Mastitis Adolescentium. E. FRANCK.—During the last eight years Franck has had two patients, one 15 and the other 16 years of age, with mastitis adolescentium. The breast was hard and sensitive, and resembled the case described by Adler, noticed in THE JOURNAL of February 23, p. 533. He does not accept Adler's explanation of the cause, as he found that the mastitis coincided in each of his patients with excessive masturbation, and was probably the result of this intense stimulation of the genital sphere. He limited treatment to a mild salve, and moral suasion to put an end to the masturbation. As the latter was suspended the mastitis retrogressed. He has also noted in other patients who confessed to excessive masturbation, that one or both of the breasts were more or less sensitive to pressure.

Vaginal Hysterolysis. STEFFECK.—By this term Steffeck describes his method of treating pathologic fixation of the uterus, which he has been following with constant success since 1894. The uterus is detached from its posterior adhesions through a posterior colpotomy, and then from the anterior through an anterior colpotomy, concluding with vaginofixation of the organ. The method applies only to directly adherent uteri. Laparotomy is preferable for adhesions from large tumors in the adnexa. He concludes with the statement that on reviewing Landau's record of 200 radical operations he can find only two or three of the cases that might not have been treated by this conservative vaginal hysterolysis. He is surprised that the "authorities have not interfered long ago to put an end to such polypragmaty."

Application of the Uranium Rays to Enhance the Effect of the X-Rays. E. GRUNMACH.—A screen of fine linen is impregnated with a solution of uranium—the source of the Becquerel rays—and suspended between the vacuum tube and the subject at a point where the X-ray must pass through it. The shadows cast on the fluoroscope are much clearer and more distinct, and the contrasts are sharper than by any other technique. The finished actinograms are likewise exceptionally distinct, even with obese subjects.

March 21.

Surgery of the Stomach. W. KOERTE.—Almost all the patients who have been operated on for ulcer have been permanently restored to their normal activity. There is not much danger of recurrence from persisting hyperacidity, according to the experiences to date. We must bear in mind, Koerte adds, that surgical intervention in these cases is not directed so much against the ulcer as against its consequences. The greatest reserve is indicated in case of nervous constriction of the pylorus as these gastric neuroses may resist even surgical intervention. Frequent small hemorrhages from the stomach may indicate an operation, but in cases of extensive, threatening hemorrhage, surgical intervention is the last resort. Perigastritic adhesions and perforations of the stomach require operation, the latter within twelve hours. A few patients recover and those who do not were doomed in any event. Dilatation of the stomach from cicatricial stenosis of the pylorus is generally recognized as incurable by medical means. The results of operation have been so good that it should be more extensively practiced, although there is always a liability of

post-operative pneumonia, hemorrhage or embolism. In the 38 operations on account of ulcer and its consequences, which Koerte has performed, the ages ranged from 16 to 61; 28 were more than 30 years old. The first symptoms of the ulcer dated from twenty to thirty years previously in a number, and in only 3 from less than a year. Pains and vomiting were constant symptoms; hematemesis or bloody stools were noted in 18 cases; the stenosis was not accompanied by dilatation in the 3 younger patients. In 4 there was considerable gastroptosis. The constriction was usually in the pylorus, once in the upper duodenum, five times in the prepyloric region and twice in the middle of the stomach. The stenosis frequently simulated a tumor and suggested carcinoma. Extensive adhesion of surfaces was noticed in many cases, and also the spread of the ulcer to the pancreas or liver. Hydrochloric acid was increased in amount in 24 cases, absent in 4, traces were found in 3, and lactic acid in 4. Only with the microscope was it possible to differentiate ulcer from carcinoma in a number of instances. Perforation into the abdominal cavity was found in 10, and into the subphrenic space in 6 instances. Resection is possible only in favorable, well-isolated stenoses or ulcers, or on suspicion of carcinoma. It makes greater demands on the strength, but is always preferable under favorable conditions. Circular resection was done 5 times, with 4 recoveries and 1 death. The segmentary resection of an approaching perforation of the anterior wall was done with success in one case. Gastroenterostomy is the normal method in case of stenosis of the pylorus. The mortality was 20.6 per cent. in 28 cases. Another patient died from pericarditis after a complicated operation which included removal of a stenosis of the esophagus. Hacker's technique was constantly followed, no button used, merely a continuous suture in two tiers. Death occurred in two cases from collapse during the operation, once from pneumonia, twice from subsequent hemorrhage from the ulcer and once from a phlegmon in the stomach wall. In one case a peptic ulcer of the jejunum occurred three years after the gastroenterostomy, causing death from perforation. Recent examination of the cured patients showed that they had all been extraordinarily improved from the nutritional point of view and the working capacity was fully restored, although a few still had occasional gastric disturbances. Plastic operation on the pylorus was done but once; the patient recovered. One patient was operated on to arrest extensive and threatening hemorrhage. The operation was extremely difficult, but the hemorrhage was arrested by enclosing the bleeding point in a suture. All went well for a week, when the threads cut through and the patient succumbed to a fresh hemorrhage from the splenic artery. In one case, a young man first noticed symptoms of gastric disturbance three weeks previously. There was absolute motor and secretory insufficiency. Even fluids were not absorbed and could be pumped out unaltered in three or four hours. There was no hydrochloric acid, pepsin nor rennet, but a little lactic acid was evident a few hours after eating. The stomach was scarcely dilated at all, which spoke against atony. On operating, perigastric adhesions were found and the pylorus felt hard and cartilaginous. After gastroenterostomy the patient rapidly recovered his strength and gained twenty pounds in a few weeks.

Differentiation of Stenosis of the Pylorus. BOAS.—Many cases that offer apparently the clinical picture of organic stenosis of the pylorus, yield in a week or two to appropriate medical treatment, lavage of the stomach and dietetic measures. These results prove that the stenosis was spastic instead of organic, and Boas confirms the folly of attempting to operate on such cases. They recover with merely moderate atony remaining. In some cases there may be a relative stenosis, and it is difficult to differentiate these from the condition known as a simple atony. This slight stenosis of the pylorus is much more frequent than had been supposed until recently. There is one sign of slight stenosis which Boas has never known to fail. This consists in a tonic contraction of the fundus wall when the stomach is full, similar to the rigidity noted in the intestine in case of stenosis. Gently massaging the fundus causes a tonic contraction of the fundus wall, which then relaxes and stiffens again under the fingers. The other clinical signs in such cases may indicate merely atony or gastric insufficiency, but this intermittent rigidity of the fundus wall speaks for slight stenosis of the pylorus.

Experimental Research on the Compensation of Sensory Ataxia. A. BICKEL.—The benefit to be derived from systematic gymnastic exercises in tabes dorsalis is now generally recognized, and Bickel reports a number of experiments which throw some light on the mechanism of compensation. The sensory nerves of both hind legs were divided in dogs. In a few months the ataxia induced by this measure had become fully compensated. Both labyrinths were then extirpated and the ataxia returned as severely as before, and the compensation was never again complete. Extirpation of the labyrinths is never followed by ataxia, under other conditions. In other experiments, after compensation of the ataxia induced by dividing the sensory nerves of both hind legs, a portion of the cortical sensory-motor zone was removed and in this case also the sensory ataxia recurred. These experiences demonstrate that the compensation of the ataxia is not the result of a process of restitution in the limbs whose sensory nerves have been severed, but is due to other organs, especially to the labyrinths and the cortical motor zone. Further research may reveal other portions of the nervous system which co-operate in the production of the compensation, possibly the thalamus opticus, the corpora quadrigemina and cerebellum. Experiments in this line are now in progress.

Neutral Stain for Fats. L. MICHAELIS.—A neutral stain can be derived from azobenzol, which has a peculiar affinity for fats. Analysis of this group of stains shows the close connection between the composition and the staining properties. The most useful representative of this group of neutral stains is scarlet R, which stains every fat and fat alone. The best proportion is a saturated solution in 70 per cent. alcohol.

Mitteilungen a. d. Grengeb. der Med. u. Chir. (Jena) VII, 4 and 5.

Appendicitis as Consequence of a General Disease. C. ADRIAN.—Experimental evidence is presented to prove that the appendix shares with the tonsils, the joints, the lymph-glands and the cavities lined with serous membrane, the faculty of attracting bacterial invasion when micro-organisms are circulating in the blood. Attempts to induce inflammation in the appendix by local injections were unsuccessful, but infection of the blood became macroscopically localized in the appendix before any other organs or section of the intestines showed indications of bacterial action, except possibly the saccule of the vestibule in rabbits. There is undoubtedly in man a connection between ordinary tonsillitis, joint affections and appendicitis. The tonsils or the appendix may be the starting-point of an acute articular rheumatism, or an appendicitis may follow a joint affection, which in turn can be traced to a tonsillitis.

Obliteration of the Portal Vein. F. UMBER.—The patient in the case described was a hard drinker who had always been in good health until two months before his death, when symptoms of congestion in the portal domain developed, with hemorrhages from the alimentary canal and recurring ascites. The autopsy disclosed that the liver was sound, but the lumen of the main portal vein had evidently been obliterated for years. Nature had compensated this obliteration as Talma has accomplished artificially, by establishing extensive collateral circulation. There were adhesions between the omentum, liver, kidney, spleen, intestines and abdominal wall, also between the diaphragm, stomach and liver, etc. This complete compensation of the obliterated vein had kept the liver normal and maintained robust health without disturbance for many years. Umber concludes that puncture may prove sufficient in case of obliteration of the portal veins, and that the establishment of collateral circulation may be left to Nature.

Maintenance of Tendon Reflexes After Division of Spinal Cord. KAUSCH.—In laminectomy on a young woman, for a tubercular affection of the vertebræ, the spinal cord was completely divided transversely at the sixth to eighth dorsal vertebræ. The tendon reflexes and muscle tonus were at once completely abolished, but returned again, the former in twenty-

four hours and the latter in forty-eight hours, and persisted afterward unmodified. The patient lived five and one-half months: menstruation was normal.

Muenchener Medicinische Wochenschrift, March 19.

Experimental Research on Disinfection of the Hands. T. PAUL and O. SARWEY.—In the sixth communication on this subject, from the Tübingen clinic, the writers show that any addition to a solution of sublimate which facilitates precipitation diminishes the disinfecting power. They also deplore the contradictory statements of other writers in regard to disinfection of the hands. Ahlfeld, for instance, is convinced that the hot water and alcohol technique affords ample disinfection and that every puerperal affection that appears afterward is of necessity autogenetic. C. L. Schleich trusts so implicitly to the disinfecting power of his marble-dust soap that his professional conscience does not prohibit septic and aseptic operations in varying sequences. The writers state: "We are of the opposite opinion, as any one would be who had witnessed our experiments."

Improved Technique of Manipulative Correction of Luxation of the Hip-Joint. SCHLESINGER.—In severe cases of congenital luxation of the hip-joint so much strength is required to restore the parts to normal position that injury frequently results. This can be entirely avoided by applying a plaster cast. The joint is manipulated and the correction that can be obtained without force is maintained by applying a plaster cast at once. This is removed in three or four days and further correction attempted. It is usually found that the luxation can be completely reduced at the second attempt, but if not, the further correction attained is maintained by a plaster cast applied for a few days more. Success has always invariably crowned the third attempt. Four of the five patients described were between 7 and 14 years of age.

Giornale Accad. di Med. di Turin., January.

Pathogenesis of Aneurysms. A. FABRIS.—From a series of experimental researches conducted by Fabris, the conclusion seems evident that morbid processes on a basis of degenerative and inflammatory changes are much more important factors in the pathogenesis of aneurysms than are the mechanical or traumatic. The laceration of the elastic fibers from a traumatism may enlarge the lumen of the vessel, but restitution proceeds rapidly and each of the coats of the artery becomes regenerated in time, with possibly more or less hypertrophy of the media. The permanent substitution of fibrous tissue after a morbid inflammatory or degenerative process prevents reduction of the lumen, which is thus left permanently and progressively dilated.

February.

Traumatic Tabes Dorsalis. C. NEGRO.—A teacher of gymnastics fell from the parallel bars, on his side, without hitting his head or spine directly. Paresis of the deltoid ensued, but yielded to massage. About four months after the traumatism, typical tabes dorsalis gradually developed. No symptoms of the kind had been noticed before the traumatism and there were no indications of syphilis or of any other infection.

Santonin in the Fulgurant Pains of Tabes. C. NEGRO.—The specific action of santonin on the eye—xanthopsia—suggested to Negro that santonin might have a specific action on the general sensibility and temporarily modify the function of the nervous system. He therefore administered it in a severe case of fulgurant pains in tabes, rebellious to other measures. The pains diminished three hours after the first dose and subsided completely two hours after the second, and did not reappear for twelve or thirteen days. The same experience followed its use again, but this time the pains did not reappear for sixteen days. The results were equally satisfactory in 8 out of 11 other patients to whom he administered the santonin, in doses of 10 cg. followed by 5 cg. five hours later. Two were only transiently benefited and one did not take the full amount. He did not venture to repeat this treatment more than four or five times in the course of two or three months. He is now testing it in neuralgia.

Electrolysis as a Means of Determining the Power of Resistance of the Red Corpuscles. E. BUFFA.—By means of the hemolysimeter devised by Buffa, he is able to determine the resisting power of the red corpuscles in less time than by other methods—from twelve to fifteen minutes being all that is necessary. He determines the number of corpuscles in the blood before and after electrolysis with a current of 4.5 milliampères.

Queries and Minor Notes.

STATES RECOGNIZING DIPLOMAS.

BRIDGEPORT, CONN., March 28, 1901.

To the Editor:—I will be greatly obliged to you for a list of the states which recognize a diploma from a reputable medical college, as sufficient to practice medicine therein. H. W. F.

ANS.—Arkansas, Colorado, Kentucky, Michigan, Nebraska, Nevada, Rhode Island, South Dakota, Wisconsin, Wyoming, Oklahoma and New Mexico. Alaska has no medical regulations whatever. Indiana, Missouri, Kansas, and possibly California and one or two other states have recently passed laws requiring examination; previously a properly certified diploma was sufficient. We do not know how soon these new laws go into effect, possibly not before July. Texas has also passed a new law requiring examination by a state board, which, however, has not yet gone into effect.

PRACTICE IN ILLINOIS—INDIAN AGENCY.

DOVER, KY., April 1, 1901.

To the Editor:—1. Will you give me the laws regulating the practice of medicine in Illinois and Michigan? 2. What procedure and qualifications are necessary to secure an appointment as agency or post physician at one of the Indian or government agencies? R. A. B.

ANS.—1. In Illinois an examination is required on presentation of a satisfactory diploma. In Michigan, license to practice is given on presentation of a diploma from an institution recognized by the State Medical Examining Board. Only some thirty or forty institutions, thus far, have been placed on the list of those whose graduates are exempted from examination. 2. Write to the Commissioner of Indian Affairs, Washington, D. C.

PRACTICE IN PENNSYLVANIA.

ONAWAY, MICH., April 2, 1901.

To the Editor:—Kindly inform me as to the requirements for practice in Pennsylvania; also whether the certificate of the Michigan state board is recognized. R. D. H.

ANS.—The requirements for practice in Pennsylvania are a certain degree of preliminary education, including the ordinary high school branches, presentation of a diploma satisfactory to the examining board and the passing of an examination. Pennsylvania does not recognize the Michigan certificates as the latter state does not require an examination in all cases as a qualification for practice.

PRACTICE IN BRITISH COLUMBIA.

EVERETT, MASS.

To the Editor—Can you inform me as to the requirements necessary to obtain a license to practice medicine in British Columbia, and to whom I would apply for particulars?

ANS.—British licentiates are permitted to practice medicine in the province of British Columbia; all others must take the prescribed examinations. The fee is $100. Full particulars can be obtained from the registrar of the College of Physicians and Surgeons, Victoria, B. C.

CITY SEWERAGE.

JANESVILLE, WIS., March 29, 1901.

To the Editor:—Kindly inform me where I can find articles or papers on "Why a City Should Have Sewerage," or the question of city sewerage. J. M.

ANS.—See articles on Habitations, in general works on hygiene, Buck, Murphy and Stephenson, Notter, Harrington, and others. Works on sanitary engineering give accepted views as to sewerage installations in cities.

CARE OF IDIOTS.

RACINE, WIS., April 3, 1901.

To the Editor:—Could you give me information regarding schools for idiots, located in Chicago's vicinity? Do the state schools receive pay patients, and would they give them extra care, etc., in consequence? If you are unable to give me the desired information, could you direct me to the proper source for it? H. E. J.

ANS.—We know of but one school for idiots near Chicago, and that is the one conducted by Miss Stryker, Wheaton, Ill. The Illinois Asylum for Feeble-Minded Children, at Lincoln, receives only state patients, and this is the case in most of the western states. Patients outside of the state, if there is room for them, are sometimes received for pay, but the institutions are generally quite full. We do not know about special care given to pay patients. An inquiry addressed to the various secretaries of the state boards of charities would doubtless give the desired information.

The Public Service.

Army Changes.

Movements of Army Medical Officers in accordance with orders from the Adjutant-General's Office, Washington, D. C., March 21 to 27, 1901, inclusive:

Ira A. Allen, captain and asst.-surgeon, Vols., leave of absence granted.

Cosam J. Bartlett, acting asst.-surgeon, from the Department of Alaska to San Francisco, Cal., for duty in the Department of California.

Shadworth O. Beasley, major and surgeon, Vols., recently appointed, from San Francisco, Cal., to Manila, P. I., for duty in the Division of the Philippines.

Edward G. Beeson, captain and asst.-surgeon, 39th Infantry, Vols., having tendered his resignation, is honorably discharged from the service of the United States, to take effect March 31, 1901.

William D. Crosby, major and surgeon, U. S. A., in addition to his present duties, will relieve Major H. S. Kilbourne, surgeon U. S. A., of his duties as medical superintendent of the army transport service in New York City, N. Y.

Joseph J. Curry, captain and asst.-surgeon, Vols., leave of absence extended.

Calvin DeWitt, lieut.-col., deputy surgeon-general, U. S. A., from sick leave to duty as a member of the board of medical officers now in session at the Army Medical Museum, Washington, D. C., for the examination of candidates for admission into the Medical Corps of the Army, relieving Col. A. A. Woodhull, assistant surgeon-general, U. S. A.

Joseph C. Garlington, acting asst.-surgeon, from Fort Mott, N. J., to duty at Fort Terry, N. Y.

John J. Gilhuley, acting asst.-surgeon, from Fort Terry, N. Y., to Bridgeport, Conn., for annulment of contract.

Charles W. Hack, captain and asst.-surgeon, Vols., member of a board at Columbus Barracks, Ohio, to examine officers of the army for promotion, subsequently ordered to duty with recruits en route from Columbus Barracks, Ohio, to San Francisco, Cal., and thence to Manila, P. I., for assignment in the Division of the Philippines.

George L. Hicks, Jr., captain and asst.-surgeon, Vols., recently promoted, from lieutenant and asst.-surgeon, 38th Infantry, Vols., is assigned to that regiment.

Henry S. Kilbourne, major and surgeon, U. S. A., from New York City, N. Y., to duty at the Presidio of San Francisco, Cal.

Julius C. Le Hardy, acting asst.-surgeon, from Savannah, Ga., to duty at Fort Wood, N. Y.

Thomas C. Longino, captain and asst.-surgeon, Vols., recently appointed, from Fort Clark, Tex., to accompany troops via San Francisco, Cal., to Manila, P. I., and for assignment in the Division of the Philippines.

Edward W. Pinkham, lieutenant and asst.-surgeon, U. S. A., from the Division of the Philippines to San Francisco, Cal., reporting, on arrival, by telegraph to the adjutant-general of the army for instructions.

Joseph C. Reifsnider, captain and asst.-surgeon, Vols., recently appointed from West Point, N. Y., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Samuel L. Steer, lieutenant and asst.-surgeon, U. S. A., from the Division of the Philippines to San Francisco, Cal., reporting on arrival, by telegraph, to the adjutant-general of the army for instructions.

William T. Tanner, captain and asst.-surgeon, Vols., recently appointed, from Fort Wadsworth, N. Y., to accompany the 3d Battalion, 11th Infantry, to Manila, P. I., reporting on arrival for assignment in the Division of the Philippines.

William R. Van Tuyl, captain and asst.-surgeon, Vols., recently appointed, from Fort Thomas, Ky., to San Francisco, Cal., en route for duty in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending March 30, 1901:

Asst.-Surgeon R. F. Ledbetter, detached from the *Constellation*, April 1, and ordered to the *Chicago*, via the *Dixie*, April 3, as relief of Asst.-Surgeon J. R. Whiting.

Asst.-Surgeon C. A. Crawford, detached from the *Dixie*, March 28, and ordered to the *Constellation*, April 1, as relief of Asst.-Surgeon R. E. Ledbetter.

Asst.-Surgeon J. R. Whiting, detached from the *Chicago*, upon reporting of relief, and ordered to the *Dixie*.

Surgeon G. Pickrell, detached from the Naval Hospital, Mare Island, Cal., and ordered home.

Asst.-Surgeon E. Davis, detached from the Naval Hospital, Mare Island, Cal., with permission to delay en route home.

Asst.-Surgeon R. K. McClanahan, ordered to the Asiatic Station, via the *Solace*, April 12.

Surgeon C. J. Decker, order detaching from the *Monocacy* and ordering to the *Oregon*, revoked; ordered to the *Newark*.

Surgeon P. Leach, order detaching from the *Oregon* and ordering to the *Monocacy* revoked.

Surgeon C. T. Hibbett, detached from the *Newark* and ordered to the Naval Hospital, Cavite, P. I.

P. A. Surgeon R. Spear, detached from the *Isla de Luzon*, and ordered to the *Concord*.

P. A. Surgeon S. G. Evans, detached from the *Concord* and ordered to the *Monocacy*.

Asst.-Surgeon E. J. Grow, detached from the *Glacier* and ordered to the *Isla de Luzon*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the 14 days ended March 28, 1901:

Surgeon R. D. Murray, granted leave of absence for five days from April 9, 1901.

Surgeon H. W. Austin, detailed as chairman of a board, to be convened from time to time as necessary, for the purpose of re-examining rejected immigrants.

P. A. Surgeon J. M. Eager, upon expiration of leave of absence to proceed to Naples, Italy, for duty, relieving Asst.-Surgeon V. G. Heiser.

Asst.-Surgeon H. S. Mathewson, granted leave of absence for three days from March 27, 1901. To rejoin station at San Juan, Porto Rico. March 27, 1901.

Asst.-Surgeon Taliaferro Clark, granted leave of absence for thirty days on account of sickness.

Asst.-Surgeon C. H. Lavinder, granted leave of absence for ten days from March 28, 1901.

Asst.-Surgeon John McMullen, upon being relieved from duty at Wilmington, N. C., to proceed to the Mullet Key Detention Camp, Florida, and assume command. To report at Washington, D. C., en route to Mullet Key, Florida.

Asst.-Surgeon H. C. Russell, granted leave of absence for eighteen days on account of sickness, from Feb. 21, 1901.

Asst.-Surgeon V. G. Heiser, upon being relieved from duty at Naples, Italy, to proceed to Washington, D. C., and report in person for duty.

Hospital Steward F. S. Goodman, to report to the director of the Hygienic Laboratory, Washington, D. C., for duty.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended March 30, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

California: Los Angeles, March 19, 15 cases; San Francisco, March 2-9, 8 cases.
District of Columbia: Washington, March 18, 16 cases.
Florida: Jacksonville, March 16-23, 2 cases.
Illinois: Anna, December-March 18, 50 cases; Chicago, March 16-23, 10 cases.
Kansas: Wichita, March 16-23, 12 cases.
Kentucky: Lexington, March 16-23, 2 cases.
Louisiana: New Orleans, March 16-23, 14 cases, 2 deaths.
Michigan: March 16-23, Bay City, 2 cases; Detroit, 6 cases.
Minnesota: March 16-23, Minneapolis, 6 cases; Winona, 10 cases.
Nebraska: Omaha, March 9-23, 12 cases.
New Hampshire: Manchester, March 16-23, 3 cases.
New Jersey: Hudson County, March 21, 6 cases; Newark, March 16-23, 1 case.
New York: New York, March 16-23, 41 cases, 6 deaths.
Ohio: Cincinnati, March 15-22, 2 cases; Cleveland, March 16-23, 43 cases, 1 death; Toledo, March 16-23, 1 case.
Pennsylvania: March 16-23, Pittsburg, 9 cases; Steelton, 6 cases.
South Carolina: Greenville, March 8-16, 2 cases.
Tennessee: March 16-23, Memphis, 26 cases; Nashville, 13 cases.
Utah: Salt Lake City, March 16-23, 40 cases.
West Virginia: Huntington, March 8-16, 12 cases; Wheeling, March 8-23, 2 cases.
Wisconsin: Milwaukee, March 16-23, 2 cases.
Porto Rico: Ponce, March 11, 13 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Feb. 23-March 9, 10 cases; Trieste, March 2-9, 2 cases.
Brazil: Rio de Janeiro, Jan. 1-31, 36 cases.
Belgium: Antwerp, Feb. 23-March 9, 8 cases.
Ceylon: Colombo, Feb. 8-16, 1 case, 1 death.
Ecuador: Guayaquil, Feb. 2-March 2, 14 deaths.
Egypt: Cairo, Feb. 25, 1 death.
France: Paris, March 2-9, 7 deaths; Roubaix, Jan. 1-31, 1 death.
Germany: Leipsic, Feb. 16-23, 1 death.
Great Britain: England, London, March 2-9, 1 case; Newcastle-on-Tyne, March 2-9, 2 cases; Scotland, Edinburgh, Feb. 2-9, 3 cases; Glasgow, March 8-15, 20 deaths.
India: Bombay, Feb. 19-26, 7 deaths; Calcutta, Feb. 8-23, 247 deaths; Karachi, Feb. 10-24, 23 cases, 10 deaths; Madras, Feb. 16-23, 7 deaths.
Japan: Yokohama, Feb. 16-23, 1 case.
Korea: Seoul, Feb. 2-9, prevalent.
Russia: Odessa, Feb. 23-March 9, 20 cases, 3 deaths; Riga, Jan. 1-Dec. 31, 1900, 174 deaths; St. Petersburg, Feb. 23-March 9, 12 cases, 1 death; Warsaw, Feb. 23-March 2, 8 deaths.
Straits Settlements: Singapore, Feb. 8-16, 2 deaths.
Syria: Jaffa, August, 1900-March 6, 1901, 4 cases, 1 death, in German colony: Jerusalem, August, 1900-Feb. 4, 1901, 1600 cases and 35 or 40 per cent. deaths.

YELLOW FEVER.

Cuba: Havana, March 8-16, 2 cases, 2 deaths.

CHOLERA.

India: Bombay, Feb. 16-23, 6 deaths; Calcutta, Feb. 8-23, 44 deaths; Madras, Feb. 16-22, 2 deaths.
Straits Settlements: Singapore, Feb. 8-16, 4 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Jan. 6-March 2, 10 cases, 10 deaths.

PLAGUE—FOREIGN.

Africa: Cape Town, Feb. 16-March 4, 55 cases, 11 deaths.
Brazil: Rio de Janeiro, Jan. 1-31, 15 cases, 9 deaths.
China: Hongkong, Feb. 2-9, 2 deaths.
India: Bombay, Feb. 19-26, 1118 deaths; Calcutta, Feb. 8-23, 520 deaths.
Straits Settlements: Singapore, Feb. 4, 1 death.